

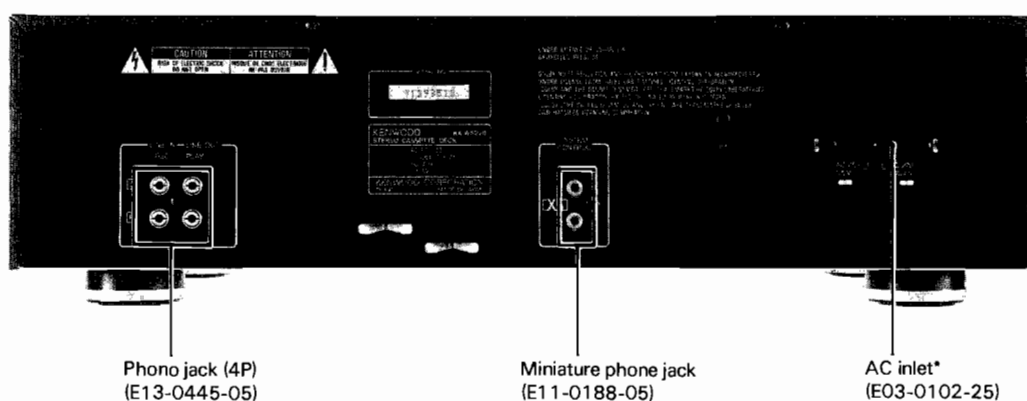
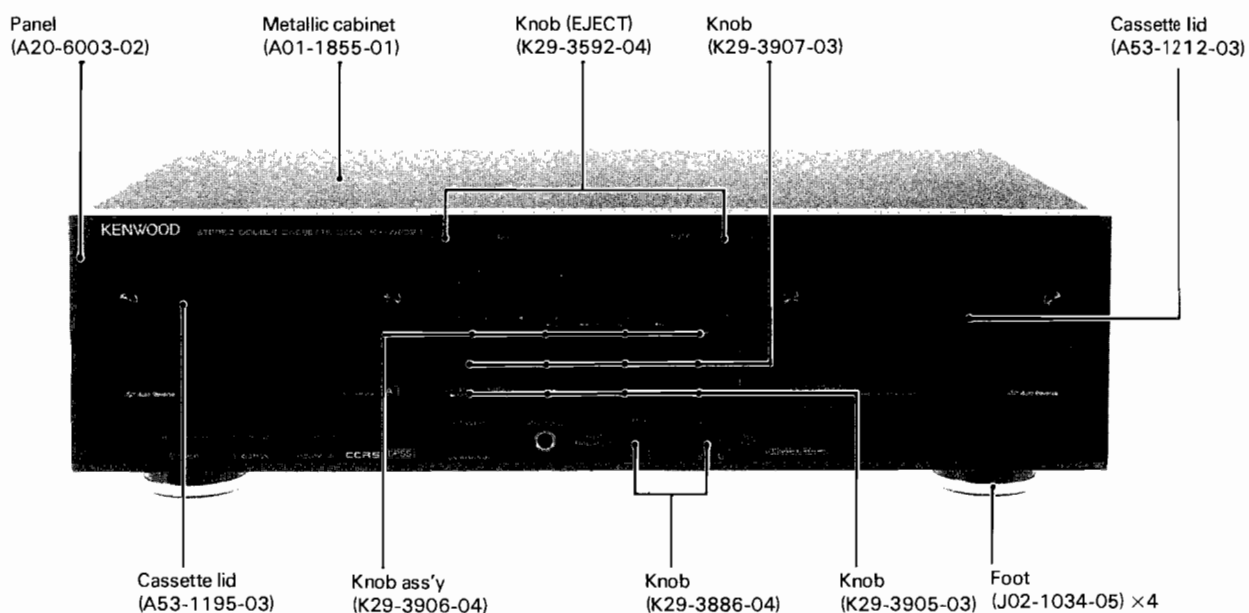
STEREO DOUBLE CASSETTE DECK

KX-W6020

SERVICE MANUAL

1756
KENWOOD

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B51-4086-00(S)3360



* Refer to parts list on page 51.

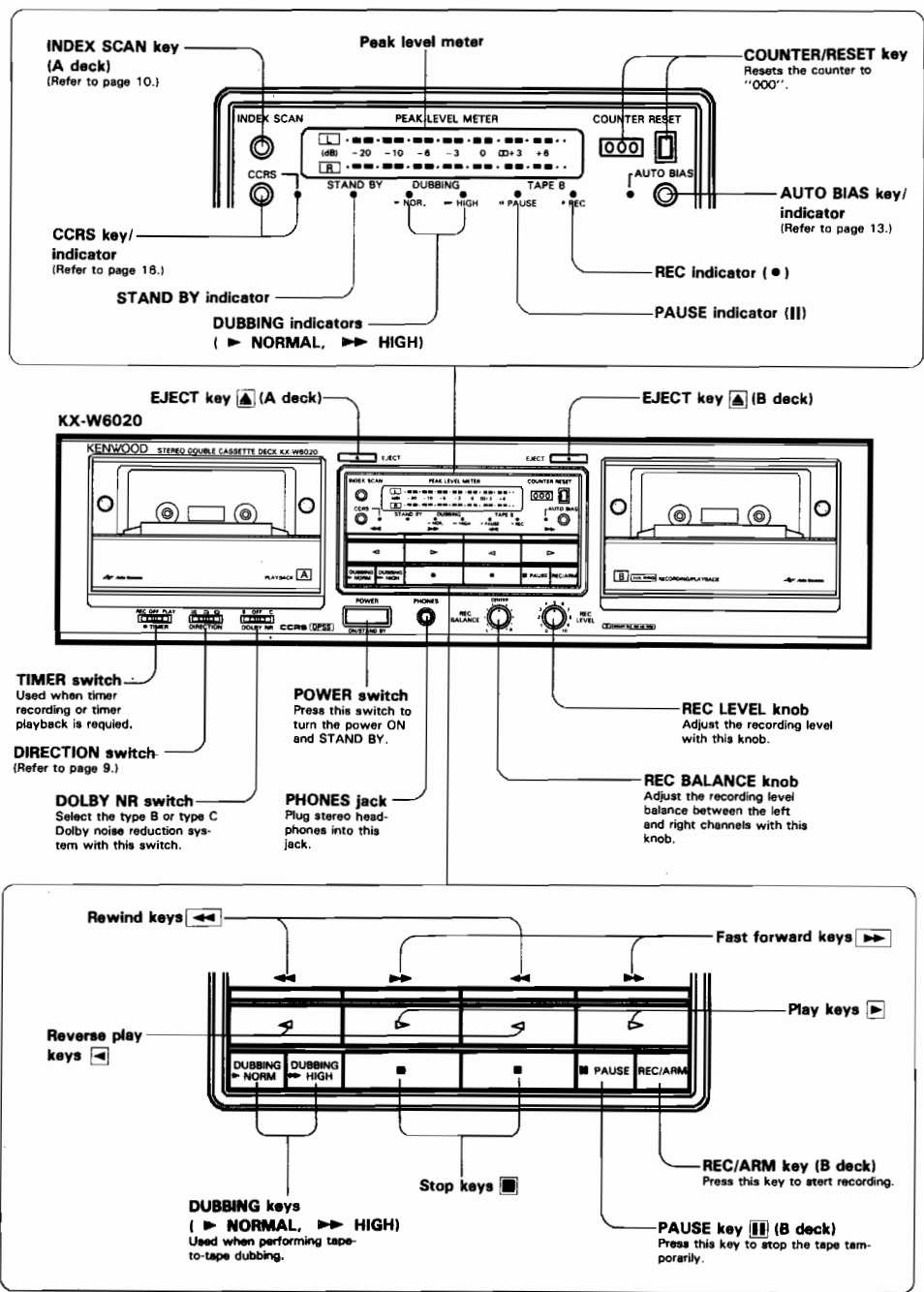
1756

KX-W6020

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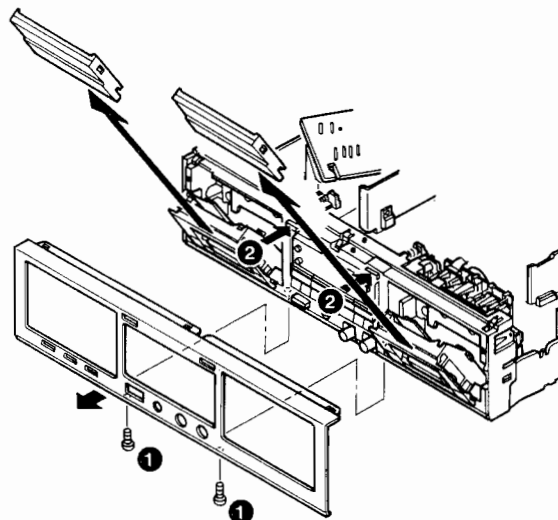
CONTROLS & INDICATORS



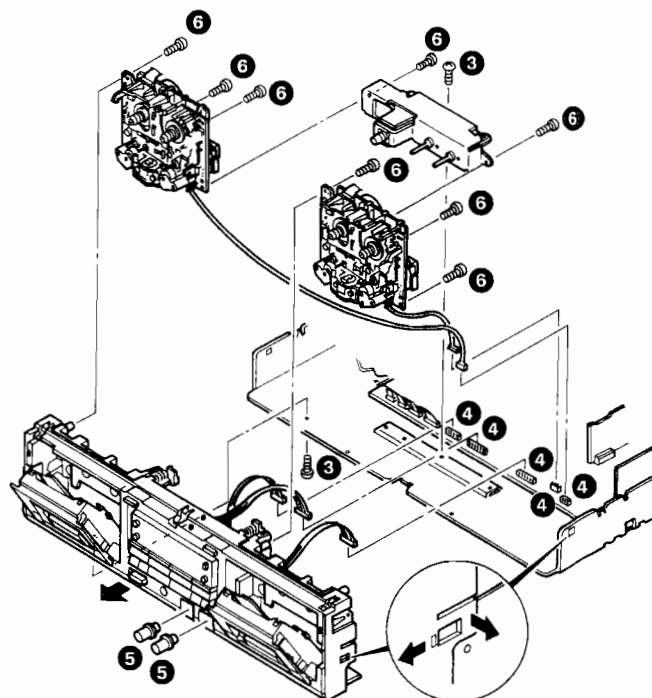
DISASSEMBLY FOR REPAIR

Remove the Case beforehand

1. Remove the two screws (1) holding the front panel to the chassis.
2. Press the EJECT button (2) to open the cassette holder, then remove the Cassette lid.

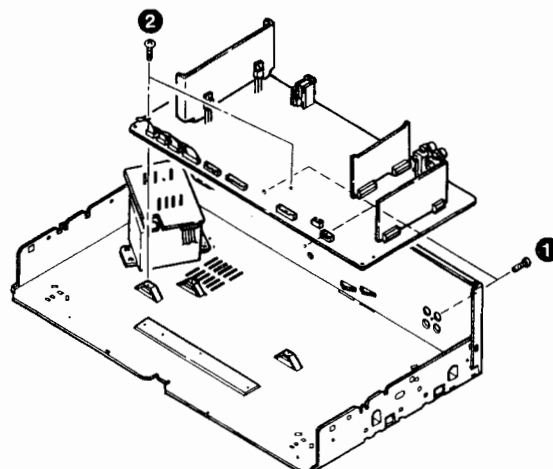


3. Remove the two screws (3).
4. Remove the five connectors (4).
5. Remove the REC BALANCE and REC LEVEL Knobs (5).
6. Remove the eight screws (6) fixing the mechanism assembly.



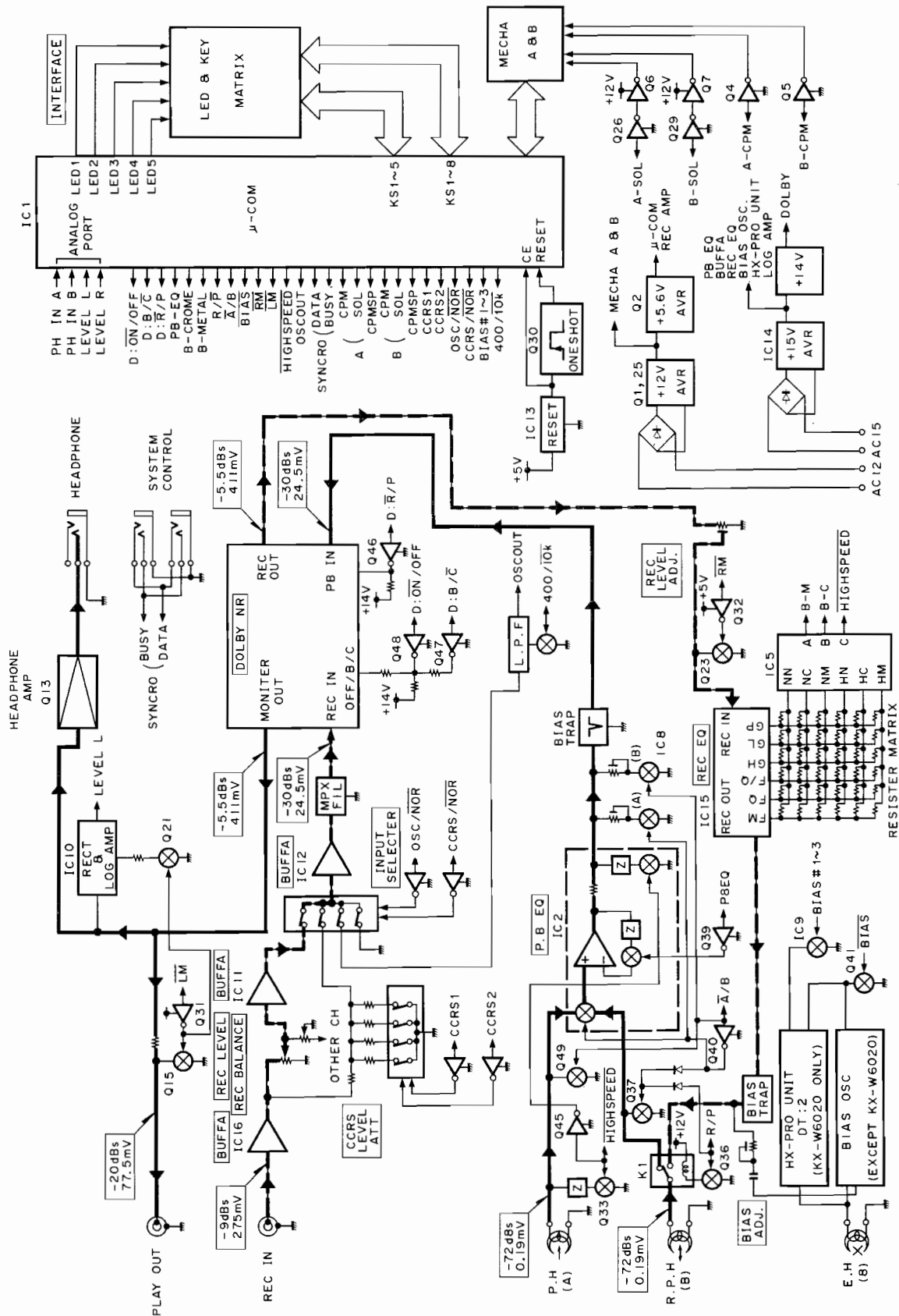
Remove the PC Board

1. Remove the three screws (1).
2. Remove the two screws (2).



KX-W6020

BLOCK LEVEL DIAGRAM



CIRCUIT DESCRIPTION

FUNCTION OF COMPONENTS

RECORD/PLAYBACK AMPLIFIER UNIT (X28-2170-10)

Component	Name	Use/Function	Operation/Condition/Interchangeability
Q1	2S-D1266 (Q,P)	+12V AVR	Amplifies the emitter output current of Q25.
Q2	2SD863 (E, F)	+5.6V AVR	Converts 12 V for mechanism to 5.6 V for microprocessor.
Q3	2SD863 (E, F)	BIAS OSC CONTROL	Controlled by Q41. REC only: On.
Q4	2SC-3246	MECHANISM (A) MOTOR CONTROL	Controlled by pin 44 of ICI. STOP only: Off.
Q5	2SC3246	MECHANISM (B) MOTOR CONTROL	Controlled by pin 41 of ICI. STOP only: Off.
Q6	2SA1286	MECHANISM (A) SOLENOID CONTROL	Controlled by Q28. On when solenoid kicks.
Q7	2SA1286	MECHANISM (B) SOLENOID CONTROL	Controlled by Q29. On when solenoid kicks.
Q8~12	2SC2021F	DISPLAY LED DRIVE	Controlled by pinc 53 to 57 (KS5 to KS1) of ICI.
Q13, 14	2SC1845	HEAD PHONE AMP	Amplifies PLAY OUT and drives headphones.
Q15, 16	2SD 1302 (S, T)	PLAYOUT MUTING	Controlled by Q31. Mutes undesired noise.
Q 17, 18	2SC945 (A) (Q, P)	BIAS OSC (B)	Generates 105 kHz with tank circuit of L7 and C66.
Q 19	2SA733 (A) (Q,P) 2SA933 (Q, R)	MOTOR SPEED CONTROL (A)	Controlled by Q26. High speed only: Off.
Q 20	2SA733 (A) (Q,P) 2SA933 (Q, R)	MOTOR SPEED CONTROL (B)	Controlled by Q27. High speed only: Off
Q 21, 22	2SC945 (A) (Q, P) 2SC17405 (Q, R)	LOGARITHMIC AMPLIFIER RELEASE TIME CONTROL	Controlled by Q31. On when VU meter lights.
Q 23, 24	2SC945 (A) (Q, P) 2SC17405 (Q, R)	REC MUTING	Controlled by Q32. REC only: Off.
Q 25	2SC945 (A) (Q, P) 2SC17405 (Q, R)	+12V AVR DRIVER	Amplifies D11 output current and drives Q1.
Q 26	2SC945 (A) (Q, P) 2SC17405 (Q, R)	MOTOR SPEED CONTROL (A)	Controlled by pin 42 of ICI. High speed only: Off.
Q 27	2SC945 (A) (Q, P) 2SC17405 (Q, R)	MOTOR SPEED CONTROL (B)	Controlled by pin 39 of ICI. High speed only: Off.
Q.28	2SC945 (A) (Q, P) 2SC17405 (Q, R)	MECHANISM (A) SOLENOID CONTROL	Controlled by pin 43 of ICI. On when solenoid kicks.

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CIRCUIT DESCRIPTION

Component	Name	Use/Function	Operation/Condition/Interchangeability
Q 29	2SC945 (A) (Q, P) 2SC17405 (Q, R)	MECHANISM (B) SOLENOID CONTROL	Controlled by pin 40 of ICI. On when solenoid kicks.
Q 30	2SC945 (A) (Q, P) 2SC17405 (Q, R)	MICROPROCESSOR RESET ONE- SHOT	Controlled by output of IC13. On for a certain time when power is turned On.
Q 31	DTA124EN	PLAYOUT MUTING DRIVER	Controlled by pin 20 of ICI. Muting only: On. No compatible transistor.
Q 32	DTA124EN	REC. MUTING DRIVER	Controlled by pin 19 of ICI. Rec only: Off.
Q33, 34	DTC124EN	PLAYBACK FREQUENCY CHARACTERISTICS CONTROL	Controlled by pin 21 of ICI. High-speed only dubbing: off.
Q 35	DTC124EN	AUTO BIAS TEST TONE FILTER CONTROL	Controlled by pin 52 of ICI. On when 400 Hz is output with AUTO BIAS.
Q 36	DTC124EN	HEAD RELAY CONTROL	Controlled by pin 16 of ICI. Rec only: On.
Q 37, 38	DTC124EN	PLAYBACK EQ INPUT MUTE (B)	Controlled by pin 16 of ICI and Q40. On when drive A is operated.
Q 39	DTC124EN	PLAYBACK EQ 120 μ /70 μ SW	Controlled by pin 13 of ICI. On when 120 us tape is played.
Q 40	DTC124EN	PLAYBACK EQ A/B SW	Controlled by pin 17 of ICI. On for drive B back.
Q 41	DTC124EN	BIAS ON/OFF CONTROL	Controlled by pin 18 of ICI. Rec: only: Off.
Q 42	DTC124EN	NORMAL BIAS CONTROL	Controlled by pins 14 and 15 of ICI. Normal tape rec: Off.
Q 43	DTC124EN	CrO ₂ BIAS CONTROL	Controlled by pin 14 of ICI. Chrome tape rec: On.
Q 44	DTC124EN	NORMAL BIAS CONTROL	Controlled by Q42. Normal tape rec: On.
Q 45	DTC124EN	HIGHSPEED INVERTER	Controlled by pin 21 of ICI. High-speed dubbing: Off.
Q 46	DTC124EN	DOLBY R/P INVERTER	Controlled by pin 12 of ICI. On in play mode.
Q 47	DTC124EN	DOLBY B/C INVERTER	Controlled by pin 11 of ICI. On when Dolby B is in.
Q 48	DTC124EN	DOLBY ON/OFF INVERTER	Controlled by pin 10 of ICI. On when Dolby is out.
Q.49, 50	DTC124EN	PLAYBACK EQ INPUT MUTE (A)	Controlled by pin 17 of ICI. On when drive B is operated.

CIRCUIT DESCRIPTION

Component	Name	USE/FUNCTION	Operation/Condition/Interchangeability																																																	
IC 1	M50941 337SP	MICRO PROCESSOR																																																		
IC 2	CXA1115BP	PLAYBACK EQ CONTROL	Selects playing output of drive A or B and amplifies it.																																																	
IC 3	TC4052BP	CCRS LEVEL SW	Attenuates recording to source volume when CCRS is operating.																																																	
IC 4	TC4052BP	INPUT SELECTER	Switches drive input in four steps: normal, CCRS, AUTO BIAS, and OFF.																																																	
IC 5	TC4051BP	REC EQ CONTROL	<table border="1"><tr><th>Pin No. Due Mode</th><th>1</th><th>2</th><th>5</th><th>13</th><th>14</th><th>15</th></tr><tr><td>Normal speed Normal</td><td>L</td><td>H</td><td>H</td><td>H</td><td>H</td><td>H</td></tr><tr><td>Normal speed Crome</td><td>H</td><td>L</td><td>H</td><td>H</td><td>H</td><td>H</td></tr><tr><td>Normal speed Metal</td><td>H</td><td>H</td><td>L</td><td>H</td><td>H</td><td>H</td></tr><tr><td>High speed normal</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td><td>H</td></tr><tr><td>High speed Crome</td><td>H</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td></tr><tr><td>High speed Metal</td><td>H</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr></table> <p>H: 1.28 V L: 0V</p>	Pin No. Due Mode	1	2	5	13	14	15	Normal speed Normal	L	H	H	H	H	H	Normal speed Crome	H	L	H	H	H	H	Normal speed Metal	H	H	L	H	H	H	High speed normal	H	H	H	L	H	H	High speed Crome	H	H	H	H	H	L	High speed Metal	H	H	H	H	L	H
Pin No. Due Mode	1	2	5	13	14	15																																														
Normal speed Normal	L	H	H	H	H	H																																														
Normal speed Crome	H	L	H	H	H	H																																														
Normal speed Metal	H	H	L	H	H	H																																														
High speed normal	H	H	H	L	H	H																																														
High speed Crome	H	H	H	H	H	L																																														
High speed Metal	H	H	H	H	L	H																																														
IC 6	HA12136A	B-TYPE DOLBY NR	(KX-69W only)																																																	
IC 7	TD62554S	ANALOG SWITCH LEVEL SHIFTER	Converts microprocessor output (0-5 V) to 0-15 V.																																																	
IC 8	TD62554S	PLAYBACK LEVEL A/B SELECT	Adjusts playback output of A and B independently of each other.																																																	
IC 9	TD62554S	AUTO BIAS CONTROL	Varies bias in five steps in AUTO BIAS mode.																																																	
IC 10	BA6138	LOG AMP	Rectifies and logarithmically compresses PLAY OUT signal.																																																	
IC 11	NJM 45650-C NJM 4586-A	VOL BUFFER	Sets VOL output to low impedance.																																																	
IC 12	NJM 45650-C NJM 4586-A	MPX BUFFER	Drives the multiplex pilot tone filter.																																																	
IC 13	PST 529 D	RESET IC	Sets CE to 0V when microprocessor power supply voltage is 4.2 V or less.																																																	
IC 14	AN78M1SF	+15V THREE-PIN REGULATOR	Generates + 15 V for analog system.																																																	
IC 15	CXA1193AP	REC EQ IC	Obtains Recording Equalization characteristics suitable for tape.																																																	
IC 16	NJM 45650-C NJM 45580-A	INPUT BUFFER	Sets REC IN signal to low impedance.																																																	
Q 1	2SD863 (E, F)	BIAS CONTROL	Controlled by pin 3 of CN ₂ . REC only: On. No compatible transistor.																																																	
Q 2, 3	μPC1297CA	BIAS OSC	Generates 105 kHz with tank circuit of L ₁ and C15. No compatible transistor.																																																	
IC 1	2SC945(A) (Q, P)	HX-PRO IC	Detects high-frequency components of source to be recorded, various amount of bias, and makes it possible to record with optimum bias.																																																	

KX-W6020

CIRCUIT DESCRIPTION

Microprocessor (M509041-337SP)

1. The microprocessor is a Mitsubishi M509041-337SP (8-bit, 8-kbyte ROM). The control mechanism is a Matsushita AR-300.
2. Normal operations
Recording is possible only on deck B; playback, and fast winding in either direction are possible on both decks A and B.
3. DPSS
Various music selection operations are performed by pressing two keys together or by pressing keys during operation.
4. AUTO BIAS (KX-W6020 only)
Generates record and playback 400Hz and 10kHz signals and sets optimum bias for the tape (in five steps).
5. CCRS
Optimum recording level (4 steps) is set when the deck is connected to a CD player that supports serial communication.
6. Serial communication
The bi-directional serial bus allows full remote control, easy operation, and synchronous recording.

Conditions for each model

	Double drive		Single drive			
	REVERSE	ONEWAY	REVERSE	ONEWAY	CCRS	AUTO BIAS
KX-W6020	○	×	—	—	○	○
KX-79CW	○	×	—	—	○	×
KX-69W	×	○	—	—	○	×

CIRCUIT DESCRIPTION

Key Matrix

	KS 1	KS 2	KS 3	KS 4	KS 5
KR 1	A ▷	B ▷	POWER	B. METAL *	TEST 2
KR 2	A ◁	B ◁	CCRSB. CrO ₂ *	B. CrO ₂	TEST 1
KR 3	A ▷▷	B ▷▷	AUTO BIAS	B. F RECINH *	ONE/RVS
KR 4	A ◁◁	B ◁◁	A CrO ₂ *	B. R. RECINH *	TACT/LOCK
KR 5	A □	B □	A HALF *	B. HALF *	—
KR 6	N. DUBB	B ∅	A. HEAD MODE *	B. HEAD MODE *	—
KR 7	H. DUBB	B □□	T. REC	DOLBY-B	↔
KR 8	A I. SCAN	B I. SCAN	T. PLAY	DOLBY-C	↶

- a. Blank columns are ignored.
b. A and B indicate decks A and B, respectively.
c. ONE/RVS is undirectional (one-way) deck when there is a diode.
Tact/lock corresponds to the tact switch (power switch) when there is a diode.
(1) The mode switch of the Tact/lock is also used to identify the double drive and single drive.
(2) When the undirectional deck is selected, the play switch uses the reverse play (◁) as the play switch (▷).

LED Matrix

	KS 1	KS 2	KS 3	KS 4	KS 5
LED 1	R. — 20	R. + 3	L. — 20	L. + 3	B. PAUSE
LED 2	R. — 10	R. + 6	L. — 10	L. + 6	B. REC
LED 3	R. — 6	A. FWD	L. — 6	B. FWD	N. DUBB
LED 4	R. — 3	A. RVS	L. — 3	B. RVS	H. DUBB
LED 5	R. 0	A. BIAS	L. 0	CCRS	POWER

- a. The —20dB indicator changes to ∞ dB and lights all the time when a unidirectional deck is used.
b. The STANDBY indicator is always lit while the deck is plugged in.
c. The FWD and RVS indicators are used for a unidirectional deck.

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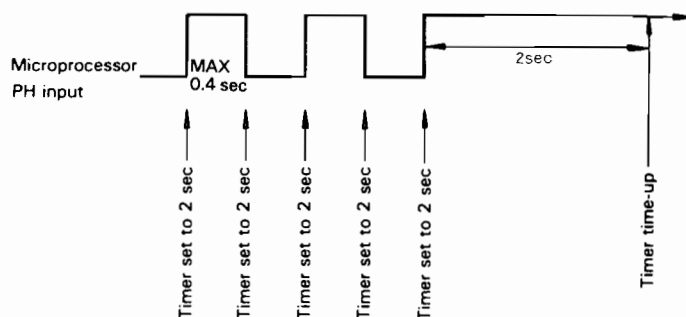
CIRCUIT DESCRIPTION

-1 Auto stop

In a tape travel status other than STOP, REC PAUSE and PLAY PAUSE, when the signal from the photo-reflector attached to the mechanism reel stand keeps "H" or "L" for more than 2 sec the tape stops or the head is reversed.

As shown above, each time that the output of the photo-reflector attached to the rear side of the reel stand is reversed, the software timer of which the set time is 2 sec is started. When the reel stand is rotating, that is when the output of the photo-reflector is reversed within 2 sec, the timer is successively updated so that the timer does not stop.

When the output of the photo-reflector keeps a fixed value for more than 2 sec the timer operates. Then, this operation is detected and the auto stop process is performed.



-2 Relay play and relay recording

(1) With the reverse mode switch set to \Rightarrow or \Leftarrow and cassettes loaded in both decks, when the deck in play reaches the tape end, the other deck starts play.

i) \Rightarrow : When the deck in play reaches the end of that side of the tape, this deck rewinds the tape. In this connection, when the other deck is in stop, the playback in the head direction displayed at present is entered.

ii) \Leftarrow : When the deck in play reaches the end of the reverse (rear) side of the tape, this deck stops. In this connection, when the other deck is in stop, the forward play (FWD PLAY) is entered.

—3 Timer Function

If the power is turned On with the timer switch set to PLAY or REC, the appropriate operation starts after an initial delay period (about 4 seconds). In timer

recording mode, about 1.5 seconds after the power comes On, the TUNER PLAY 28H signal is output to set the input selector of the amplifier to TUNER.

—4 Auto bias (KX-6020, drive B only)

Signals of 400 Hz and 10 kHz are recorded, the bias being changed in five steps. The playback level is read after A-D conversion, and the bias that produces the smallest difference in level between 400 Hz and 10 kHz is selected. The auto bias operates for all kinds of tape, but the bias is actually changed for normal tapes only.

(1) Recording takes place for about 10 seconds with REC MUTE On (blank recording).

(2) A 400Hz signal is recorded for 2 seconds at the reference bias setting.

(3) A 10kHz signal is recorded, varying the bias from low to high in five steps (2 seconds each).

(4) When the point at which the 400Hz recording starts is detected by rewind search, playback starts.

(5) The 400Hz and 10kHz levels are read (1 second for each bias setting). The bias that produces the smallest difference in level between the two signals is selected.

(6) When the point at which the 400Hz recording starts is detected by rewind search, the tape stops.

— During steps 1 to 6, the AUTO BIAS LED flickers. When the operation ends, this LED lights continuously. In addition, during steps 1 to 6, any key other than the STOP key of drive B and the , and keys of drive A is inhibited.

— The AUTO BIAS key is accepted only when drives, A and B are stopped.

— Adjustment takes a total of 42 seconds (23 seconds for recording, 17 seconds for playback, and 1.5 seconds x2 for rewind search.)

CIRCUIT DESCRIPTION

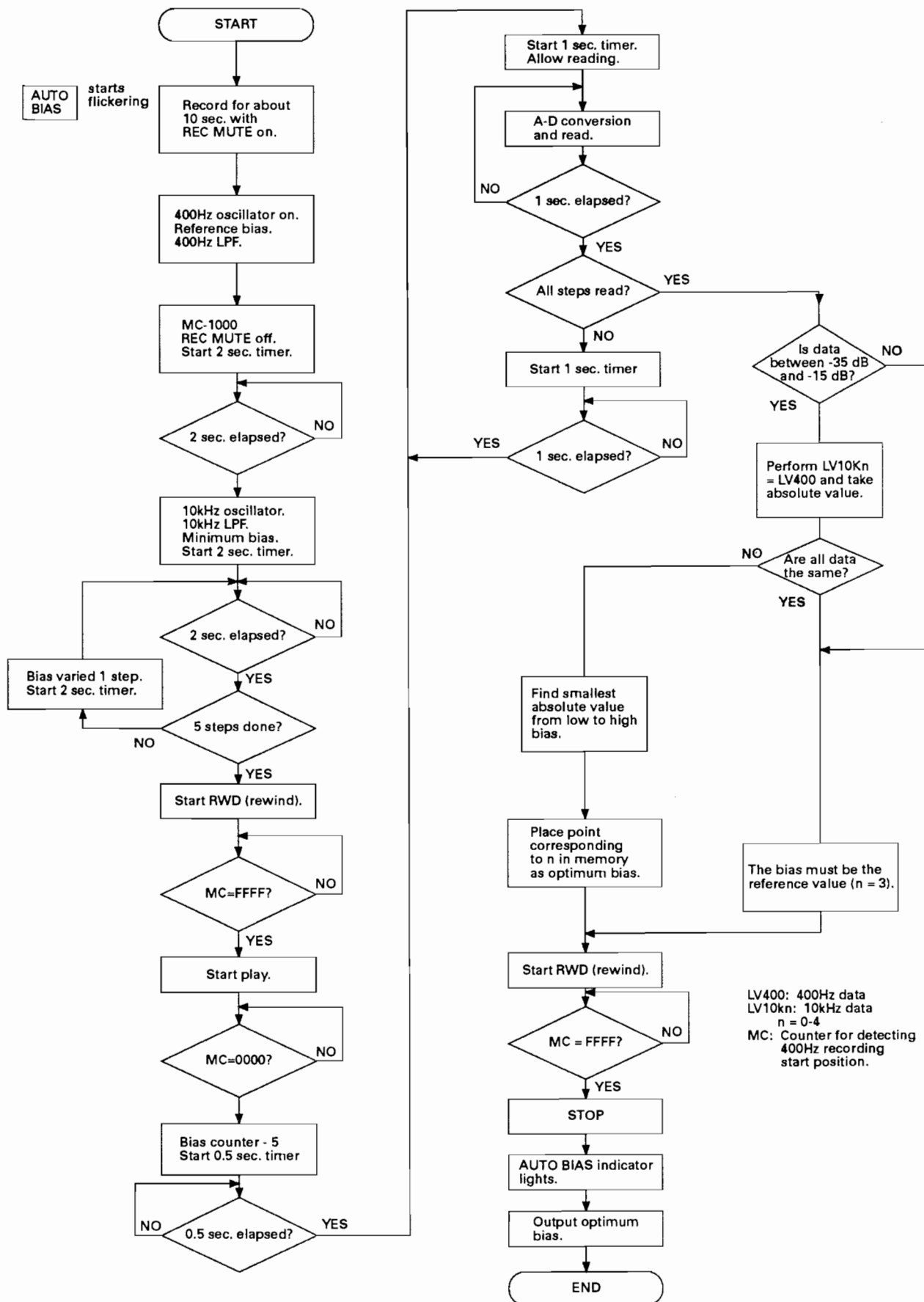
Status transition table

Auto stop

Operation mode		Reverse mode					
		A	B	A	B	A	B
Normal operation	FOR PLAY	When there is no cassette in that drive: STOP	←	REV PLAY		REV PLAY	
	REV PLAY	When there is a cassette in that deck: STOP	←	STOP		FOR PLAY	
	FF	STOP	←				
	RWD	STOP	←				
	FOR REC	—	STOP	—	REV if REV REC is OK. Other-wise, STOP.	—	REV if REV REC is OK. Other-wise, STOP
	REV REC	—	STOP	—	STOP		STOP
D P S D A S H & P L A Y	ONE-TUNE REPEAT	STOP	←				
	AUTO REC MUTE, RE REC STANDBY	—	STOP		STOP	—	STOP —
	REW PLAY	FF search	←				
	FF search RWD search Index scan	STOP	←	The tape is reversed, and the operation continues. When both sides have been searched, the tape stops.			
	FOR PLAY	RWD	←	REV PLAY			
	REV PLAY	FF	←	STOP		FOR PLAY	
	FOR CUE	RWD	←	REV PLAY			
	REV RVW	FF	←	STOP		FOR PLAY	
	RWD	FOR CUE	←				
	FF	REV REV	←				
D U B B	FOR PLAY (A) FOR REC (B)	STOP	←	REV PLAY	REV REC	REV PLAY	REV REC
	REV PLAY (A) REV PLAY (B)	STOP	←				

CIRCUIT DESCRIPTION

AUTO BIAS FLOWCHART



CIRCUIT DESCRIPTION

CCRS

(1) Outline of functions

Plays a specific part of a CD, reads the level, adjusts (attenuates) the recording level to the optimum value, and after completion of the search, starts synchronous recording.

(2) Operation method

a) Load a disc in the CD player and load an unprotected cassette in the deck.

b) Set REC OUT on the amplifier to CD.

For the system controller receiver, set INPUT to CD and TAPE2 to OFF.

c) Press the CCRS key on the deck.

(3) Outline of operations (See flowchart for details).

(1) DECK

• When the CCRS key is on -----

If there is an unprotected cassette in drive B, the CCRS start code is output. If a CD standby code is received within 30 seconds of this, the next operation is performed. If no CD standby code is received, the DECK STOP code is output, and the deck returns to its initial state.

• When CD standby is received -----

The recording input is switched to CCRS, and after ARM for about 8 seconds, REC PAUSE is set and detection of the input level is started. At the same time, the DEC CD REC code is output.

• When CD standby is received -----

The current level is fixed, the deck standby code is output, and REC is entered.

* If the second CD standby code is not received within 3 minutes of the first CD standby being received, the DECK STOP code is output and the deck returns to its initial state.

(2) CD player

• When CCRS start is received -----

Determines whether a disc is loaded. If no disc is loaded, the CD STOP code is output. If a disc is loaded, the CD standby code is output and search starts. Fast forward play is performed for the last minute of the track. The output level when this is done is the same as the normal level.

When all the tracks end, the CD standby code is output again, and the CD player enters the standby state.

• When deck standby is received -----

The standby state is released and playing starts from the first track or program step.

(4) Inhibition of keys during CCRS (while the level is set)

• CD player---All keys other than OPEN/CLOSE and STOP are inhibited.

• DECK All keys other than B-STOP, A-FF, A-RWD, and A-STOP are inhibited.

(5) CCRS cancellation

(1) When the level is being set

- CD player: STOP and OPEN/CLOSE keys
- Deck: B-STOP key, B-EJECT

(2) After the level is set

- Normal CD player: OPEN/CLOSE key
- CD changer: STOP and OPEN/CLOSE keys

(6) CCRS Indicator

• DECK When the level is being set: CCRS indicator flickers.

After the level has been set: CCRS indicator lights continuously.

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CIRCUIT DESCRIPTION

(7) CD recording method after the CCRS level has been set

- (1) Operation • CD player: Select a track, then PAUSE.
• Deck: Press the CCRS key.
- (2) Operation after about an 8-second ARM, the deck sets the recording level and starts

recording, and the CD player enters PLAY.
If PLAY or REC is performed manually, recording is done with the normal recording level (manual). When the amplifier outputs a selector code and the selector determines the CD player, recording is done with the fixed level.

(8) Correspondence to CD player with edit function

Deck type Edit type	ONEWAY	REVERSE DECK
• Single-side edit	<ol style="list-style-type: none"> 1. Edit with CD player. 2. Press CCRS key. 3. When one side has ended, replace the tape and perform remain edit with CD player. 4. Press the CCRS key. 	<ol style="list-style-type: none"> 1. Edit with CD player. 2. Press CCRS key. 3. Reverse tape direction, and perform remain edit with CD player. 4. Press CCRS key.
• Double-side edit	<ol style="list-style-type: none"> 1. Edit with CD player. 2. Press CCRS key. 3. When side A has ended, enter PAUSE at the first track of side B. Replace the tape. 4. Press CCRS key. 	<ol style="list-style-type: none"> 1. Edit with CD player 2. Press CCRS key. 3. When side A has ended, the CD player enters PAUSE at the first track of side B. The deck reverses to record on side B, and after an 8-second ARM, starts recording and plays the CD.

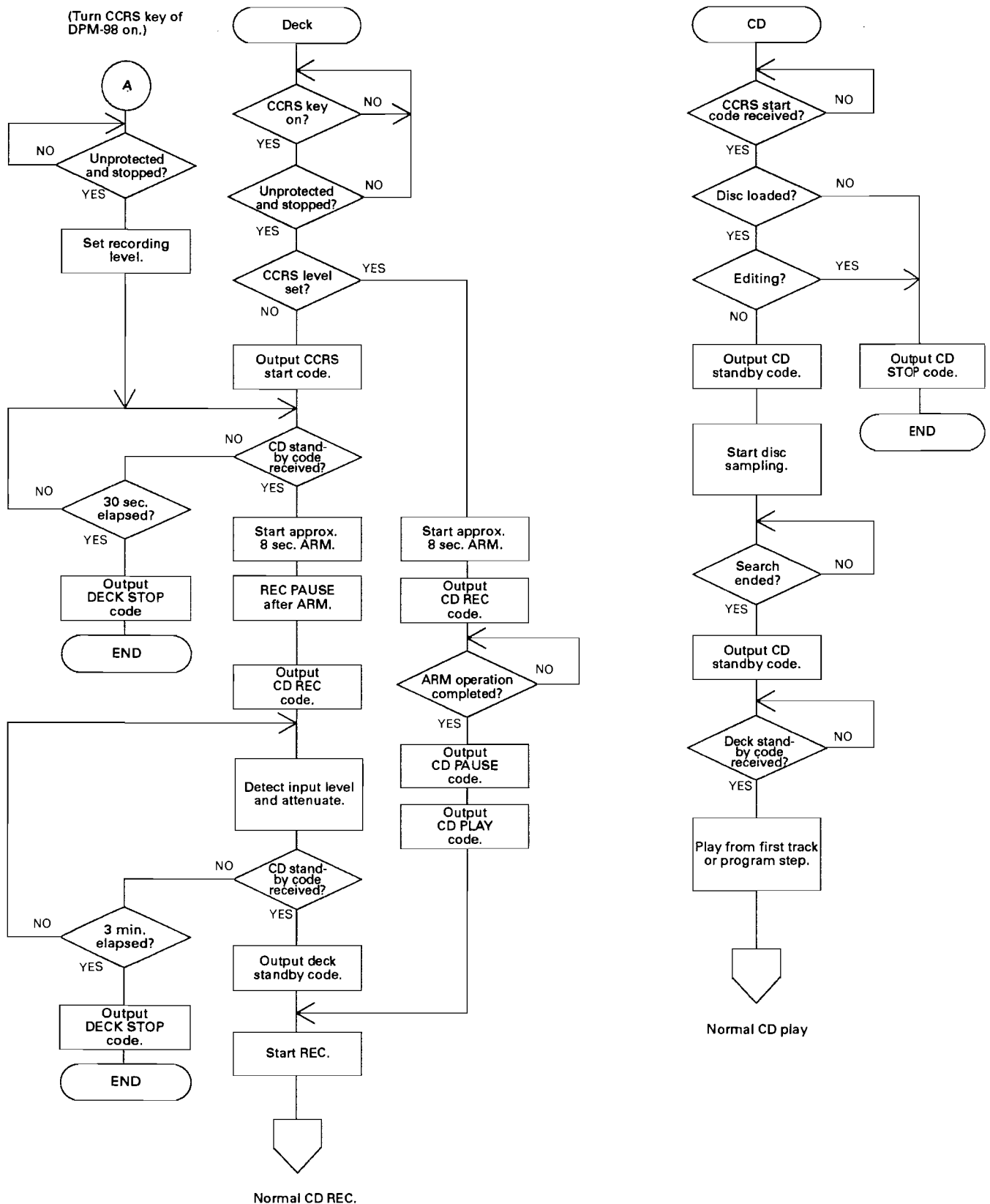
(9) Support of 1989 system controller and CD changer (DPM-98)

- (1) CCRS uses the CCRS key on the DP side. The deck sets the recording level, and performs the

same operations as already described.

CIRCUIT DESCRIPTION

CCRS operation flowchart



KX-W6020

CIRCUIT DESCRIPTION

Initial conditions



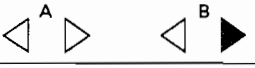
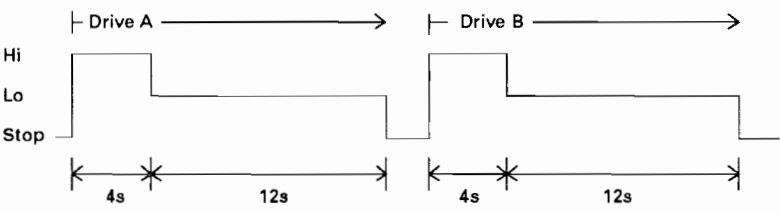
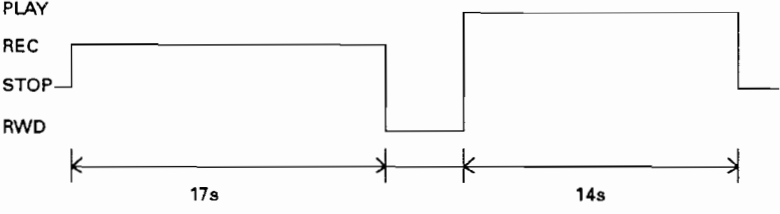
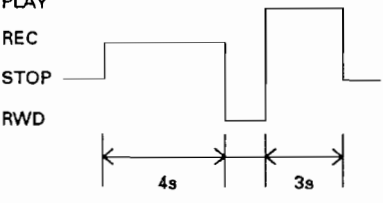
Item	Condition	Pin No.	Pin logic
$\overline{A/B}$	B	17	High
$\overline{\text{LINE MUTE}}$	ON	20	Low
$\overline{\text{REC MUTE}}$	ON	19	Low
EQ SP	NORMAL	21	High
BIAS (B)	OFF	18	High
R/\overline{P} (B)	PLAY	16	Low
DOLBY $\overline{\text{ON/OFF}}$	OFF	10	High
DOLBY $\overline{R/P}$	PLAY	12	High
BIAS	BIAS 3	49	High
OSC OUT	OFF	23	Low
OSC FIL (400/ $\overline{10K}$)	10 K	52	Low
A. BIAS	NORMAL	48	Low
CCRS	NORMAL	47	Low
CCRS 1	OFF	46	Low
CCRS 2	OFF	45	Low
P. EQ	70 μ S	13	Low

CIRCUIT DESCRIPTION

Test Mode

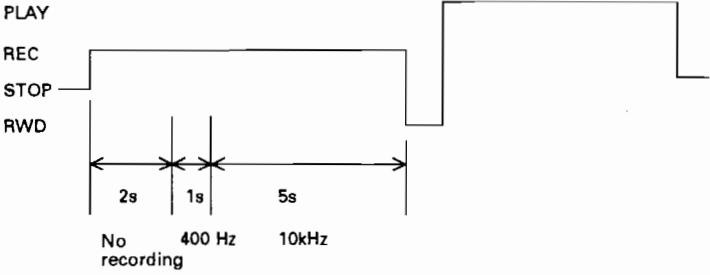
The system enters this test mode when KS5 (pin 53) and KR2 (pin 36) are shorted together with a diode and the power is turned on.

Cancel method: Press the PAUSE key to cancel the test mode.

Mode No.	Timer switch position	KEY	Operation
1	—	—	All indicators light for about 1.5 seconds. Keys are enabled after the indicators go out.
2	—	→ ←	DIRECTION switch check 
	—	↶	
	—	↷	
3	—	—	REC INH switch check (in mechanical stop only) <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> { <div style="display: inline-block; vertical-align: middle; margin-right: 5px;">F (side A) unprotected: Left channel +6dB lights.</div> <div style="display: inline-block; vertical-align: middle;">R (side B) unprotected: Right channel +6dB lights.</div> </div>
4	PLAY	—	
5	REC	—	
6	—	⏏	 <div style="margin-top: 10px;"> • Record for 4 seconds, rewind, and play back. </div>

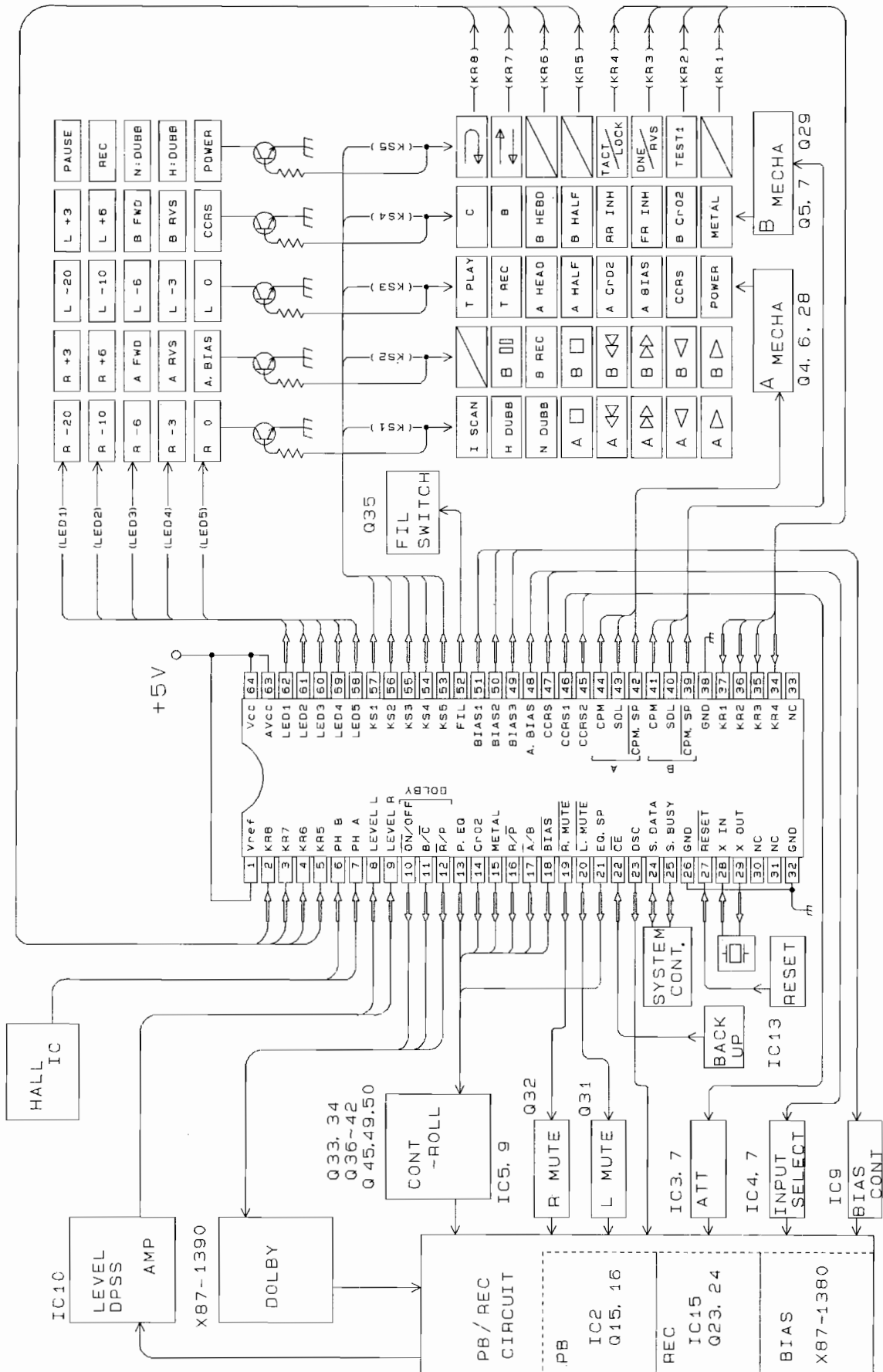
KX-W6020

CIRCUIT DESCRIPTION

Mode No.	Timer switch position	Key	Operation
7	_____	CCRS	If an unprotected cassette is loaded in deck B (deck A is stopped), the deck starts recording. The deck samples the input level, and if it is more than +5dB, the deck reduces the attenuator (in four steps). The deck stops automatically after 3 minutes.
8	_____	A. BIAS	<p>If an unprotected cassette is loaded in deck B (deck A is stopped), the deck enters the auto bias operation shortening mode. (Total time about 40 sec. →20 sec.)</p> 

- * Modes 1, 4, and 5 work when the power is applied or the power switch is turned On.
- * Keys other than those above operate as usual.

CIRCUIT DESCRIPTION



CIRCUIT DESCRIPTION

Pin Description

Pin. No.	I / O	Name	Function
1	O	VREF	Reference power for internal A/D converter
2	I	KR8	Key return
3	I	KR7	Key return
4	I	KR6	Key return
5	I	KR5	Key return
6	I	PHINB	Deck B rotation detection
7	I	PH IN A	Deck A rotation detection
8	I	LEVEL L	Left channel playback signal detection
9	I	LEVEL R	Right channel playback signal detection
10	O	DOLBY ON/OFF	Dolby in/out switching
11	O	DOLBY B/C	Dolby B/C switching
12	O	DOLBY R/P	Dolby REC/ PLAY switching
13	O	P. EQ	Playback equalizer switching
14	O	CrO2	Recording equalizer switching
15	O	METAL	Recording equalizer switching
16	O	R/P	Record/playback circuit switching
17	O	A/B	Head switching
18	O	BIAS	Bias generation on/off
19	O	REC MUTE	REC MUTE on/off
20	O	LINE MUTE	Line mute on/off
21	O	EQ SP	Recording equalizer speed switching
22	I	C.E.	Backup detection
23	O	OSC. OUT	Internal generation output for auto bias
24	I/O	S. DATA	Serial data
25	I/O	S. BUSY	Serial busy
26	O	GND	Microcomputer chip mode selection
27	I	RESET	Reset (Low reset)
28	I	X IN	Clock for microcomputer
29	O	X OUT	Clock for microcomputer
30	I		Clock for microcomputer (for clock) Unused
31	O		Clock for microcomputer (for clock) Unused
32	O	GND	Power supply
33	O		Microcomputer system clock output Unused
34	I	KR 4	Key return
35	I	KR 3	Key return
36	I	KR 2	Key return
37	I	KR 1	Key return
38	O	GND	Pulldown for ports (PO, P1, and P2)
39	O	CPM. SP	Deck B motor speed switching
40	O	SOLD	Deck B solenoid on/off
41	O	CPM	Deck B motor on/off
42	O	CPM. SP	Deck A motor speed switching
43	O	SOLD	Deck A solenoid on/off
44	O	CPM	Deck A motor on/off
45	O	CCRS2	For CCRS and attenuator
46	O	CCRS1	For CCRS and attenuator
47	O	CCRS	Line input switching (for CCRS)
48	O	A. BIAS	Line input switching (for A-BIAS)
49	O	BIAS 3	Bias switching for auto bias
50	O	BIAS 2	Bias switching for auto bias
51	O	BIAS 1	Bias switching for auto bias
52	O	OSC FIL	Internal generation filter switching for auto bias
53	O	KS 5	Key scan
54	O	KS 4	Key scan
55	O	KS 3	Key scan
56	O	KS 2	Key scan
57	O	KS 1	Key scan
58	O	LED 5	LED drive scan
59	O	LED 4	LED drive scan

Pin. No.	O / I	Name	FUNCTION
60	O	LED 3	LED drive scan
61	O	LED 2	LED drive scan
62	O	LED 1	LED drive scan
63	O	AVCC	Internal A/D converter
64	O	VCC	Power supply

HA12142NT DOLBY IC (X 87-1390-00)

Functions

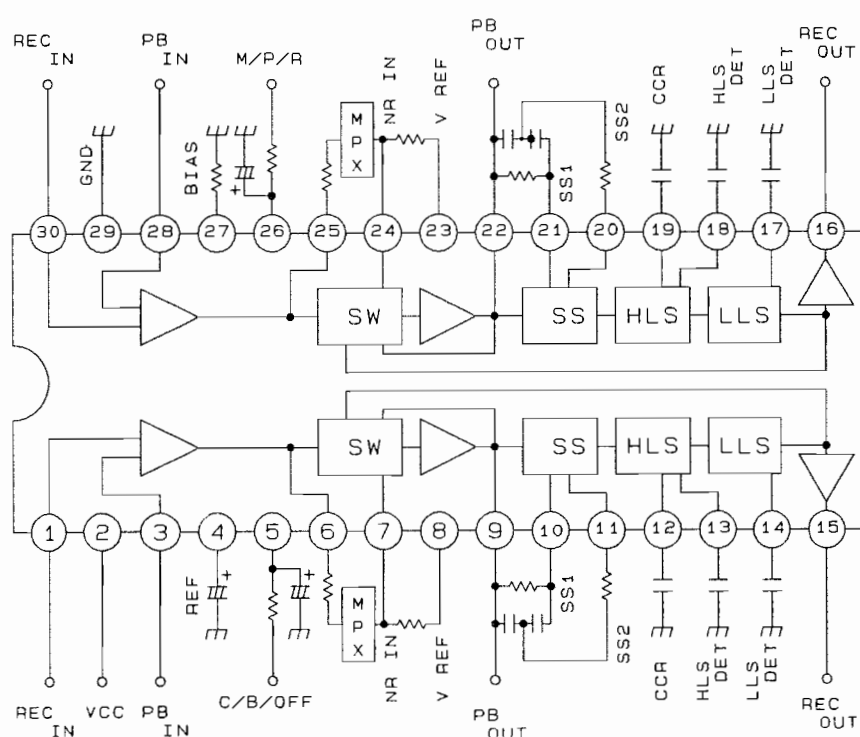
1. Dual Dolby B/C-type NR processor
2. NR OFF/B/C control switch
3. MPX by-pass/Encode/Decode (MPX OFF/REC/PB) control switch
4. MPX Filter Drive Circuit

Absolute Maximum Ratings

TA=25 °C Unless otherwise specified

ITEM	Symbol	Rating	Unit	Note
Supply Voltage	Vccmas	16	V	
Power Dissipation	Pd	400	mW	Ta < 85°C
Operating Temperature	Topr	-40 ~ + 85	°C	
Storage Temperature	Tstg	-55 ~ + 125	°C	
Lead Temperature	Tl	260	°C	Soldering 10 sec

PIN Description



```

REC IN      (Recording input)
VCC         (Power Supply)
PB IN      (Playback input)
REF         (1/2 VCC)
C/B/OFF    (C:H M:B L:OFF)
NR IN      (NR Processor input)
V REF      (Reference Voltage Output)
PB OUT     (De code Out put)
SS1        (Spectral skewing Amp
              input)
SS2        (Spectral skewing Amp
              Out put)
CCR         (Current controlled
              resistor output)
LLS DET    HLSDET
            (Time constant pin
              for rectifier)
REC OUT    (Encode output)
M/P/R      (Mode control pin
              for REC/PB
              H:REC M:REC L:PB)
            MPX OFF MPX ON
BIAS       (Reference current
              input)

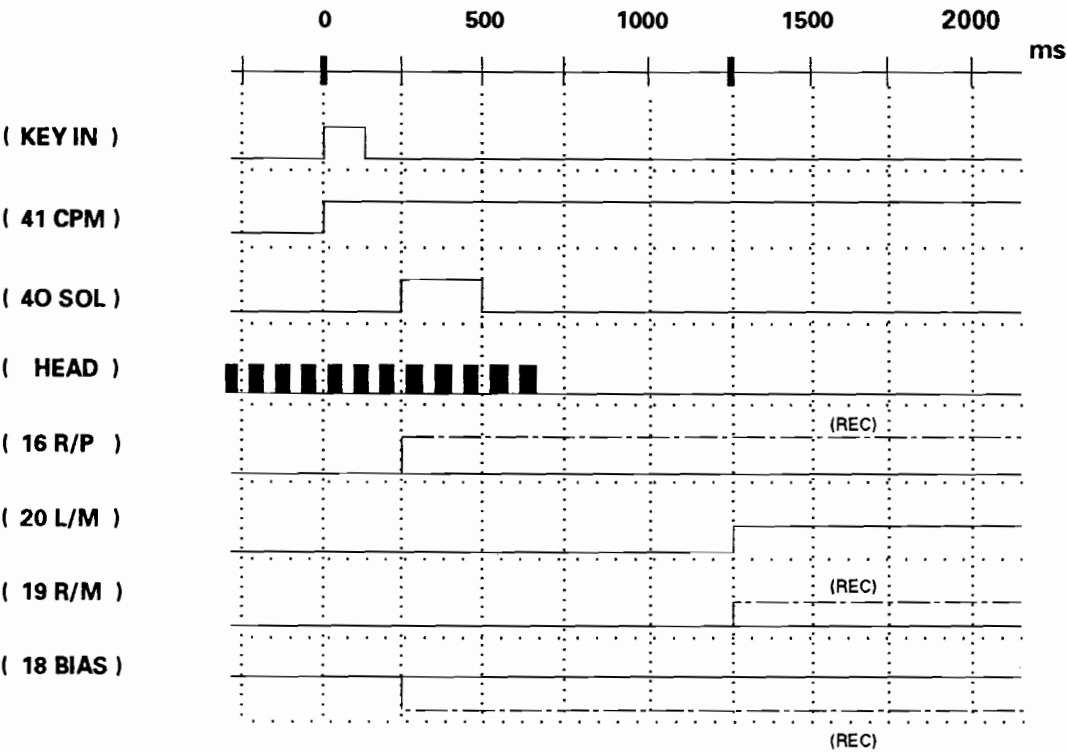
```

KX-W6020

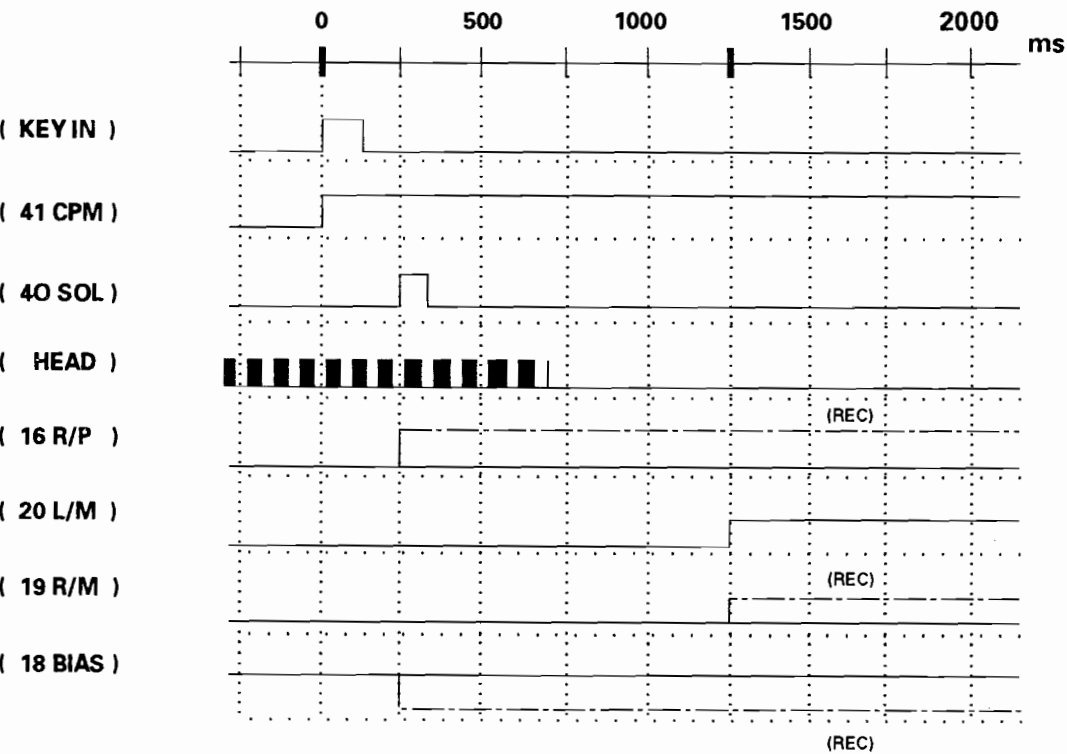
CIRCUIT DESCRIPTION

TIMING CHART

STOP→FWD R/P

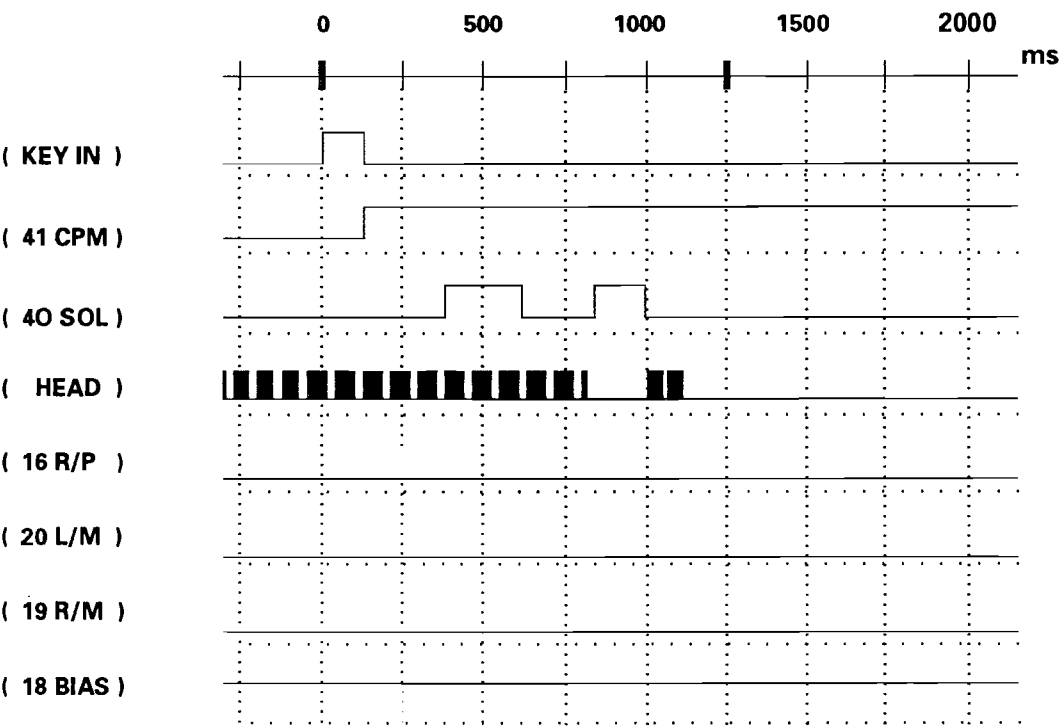


STOP→RVS R/P

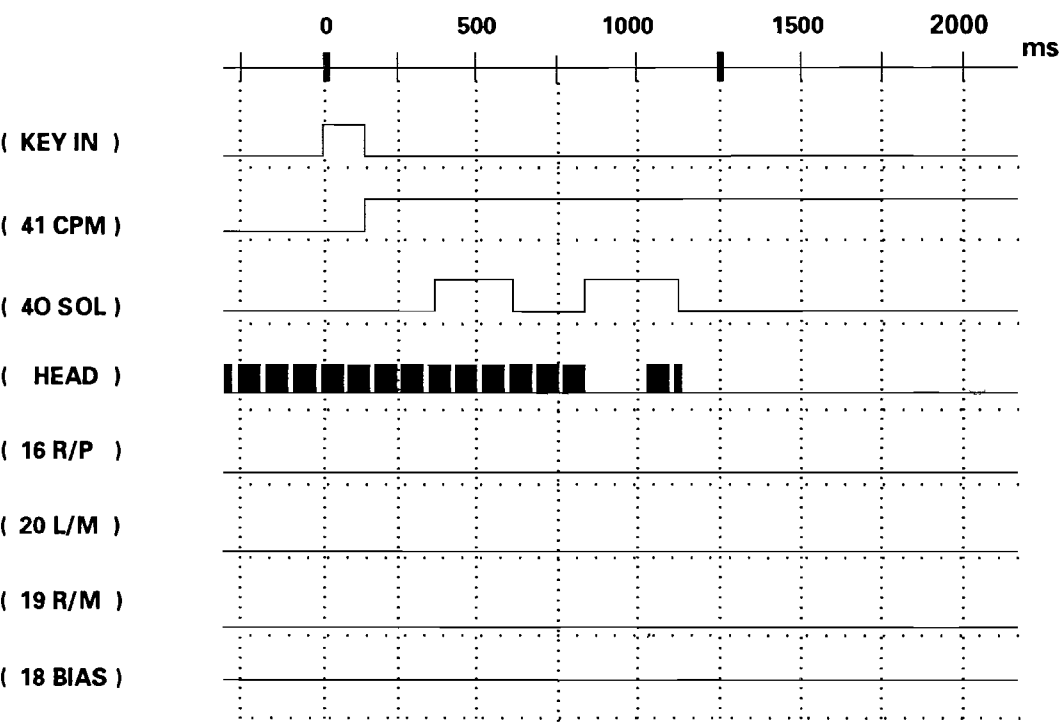


CIRCUIT DESCRIPTION

STOP→FF



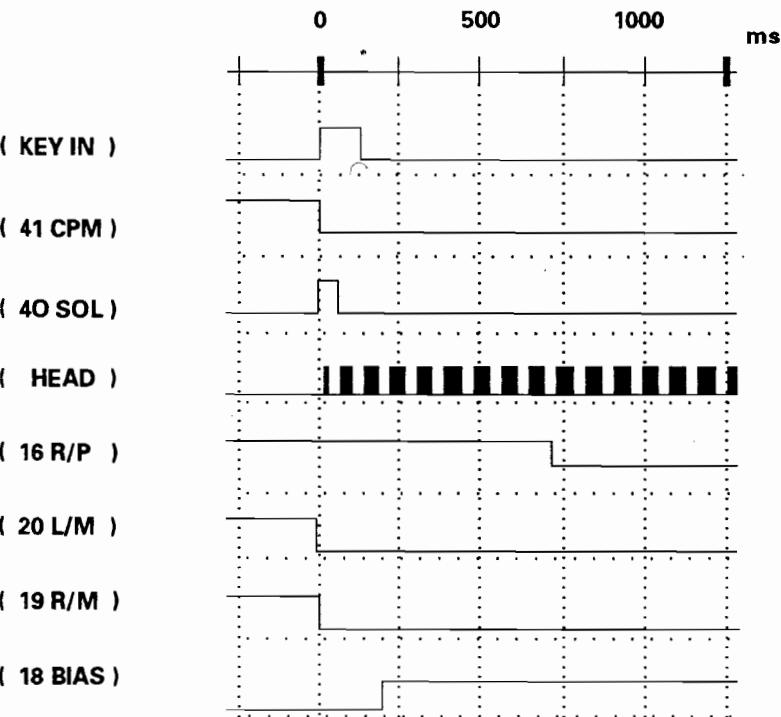
STOP→REW



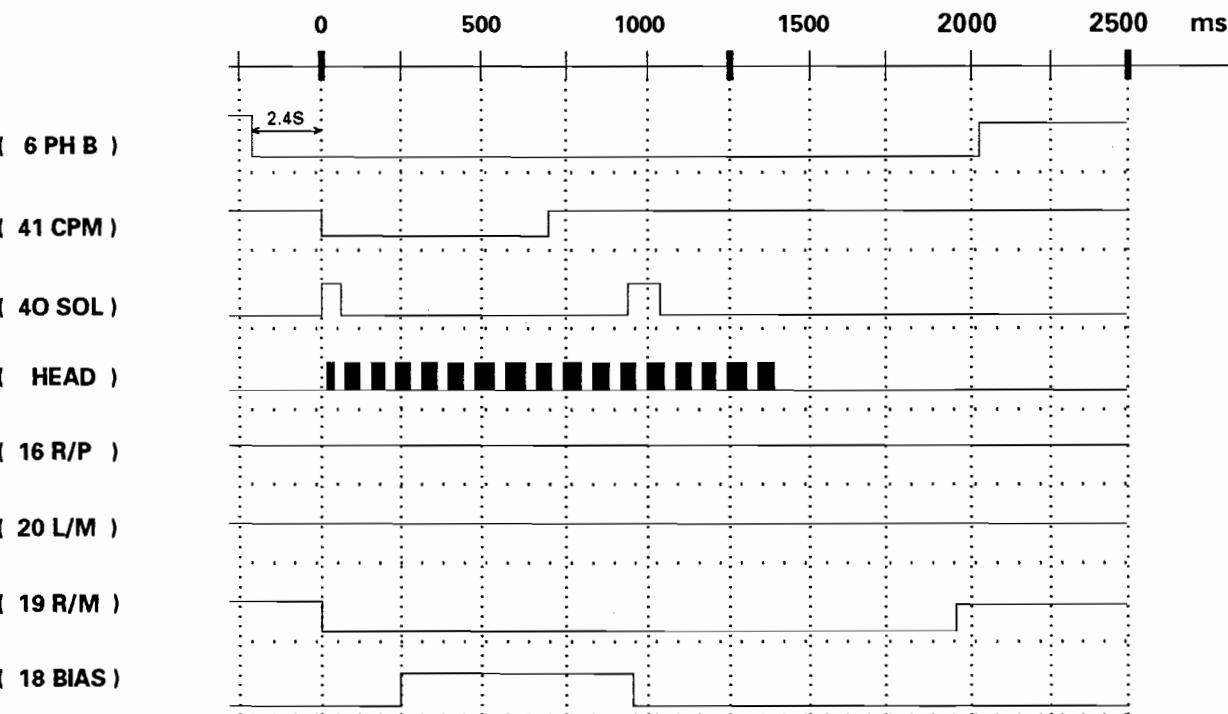
KX-W6020

CIRCUIT DESCRIPTION

F/R REC→ STOP

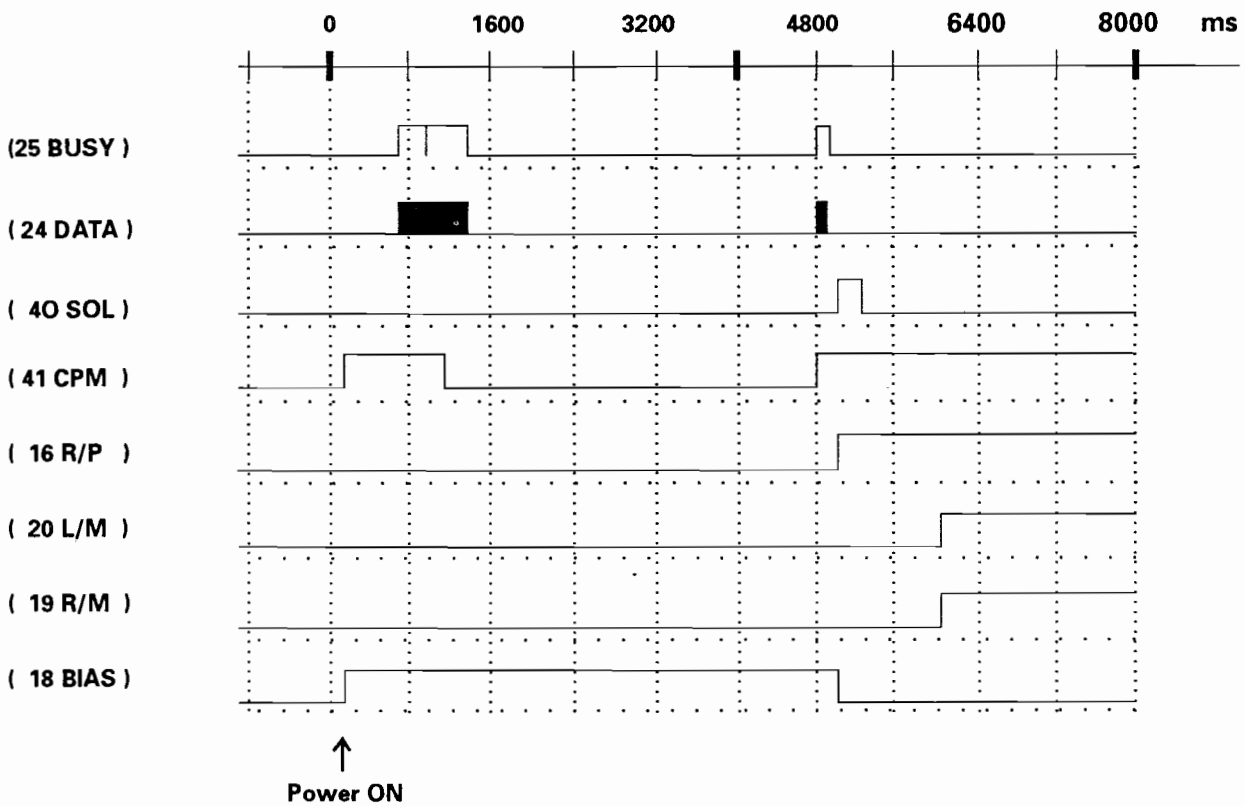


FWD REC→RVS REC

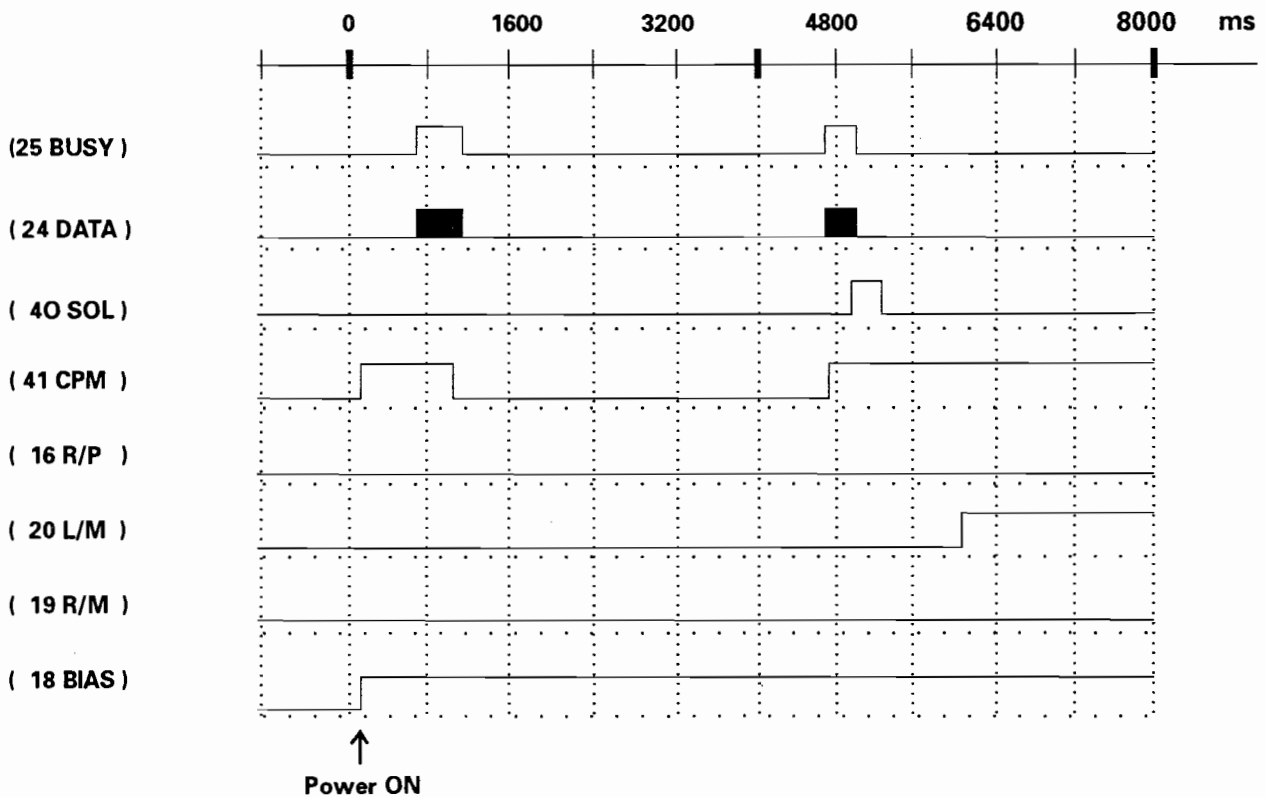


CIRCUIT DESCRIPTION

POWER OFF→TIMER REC



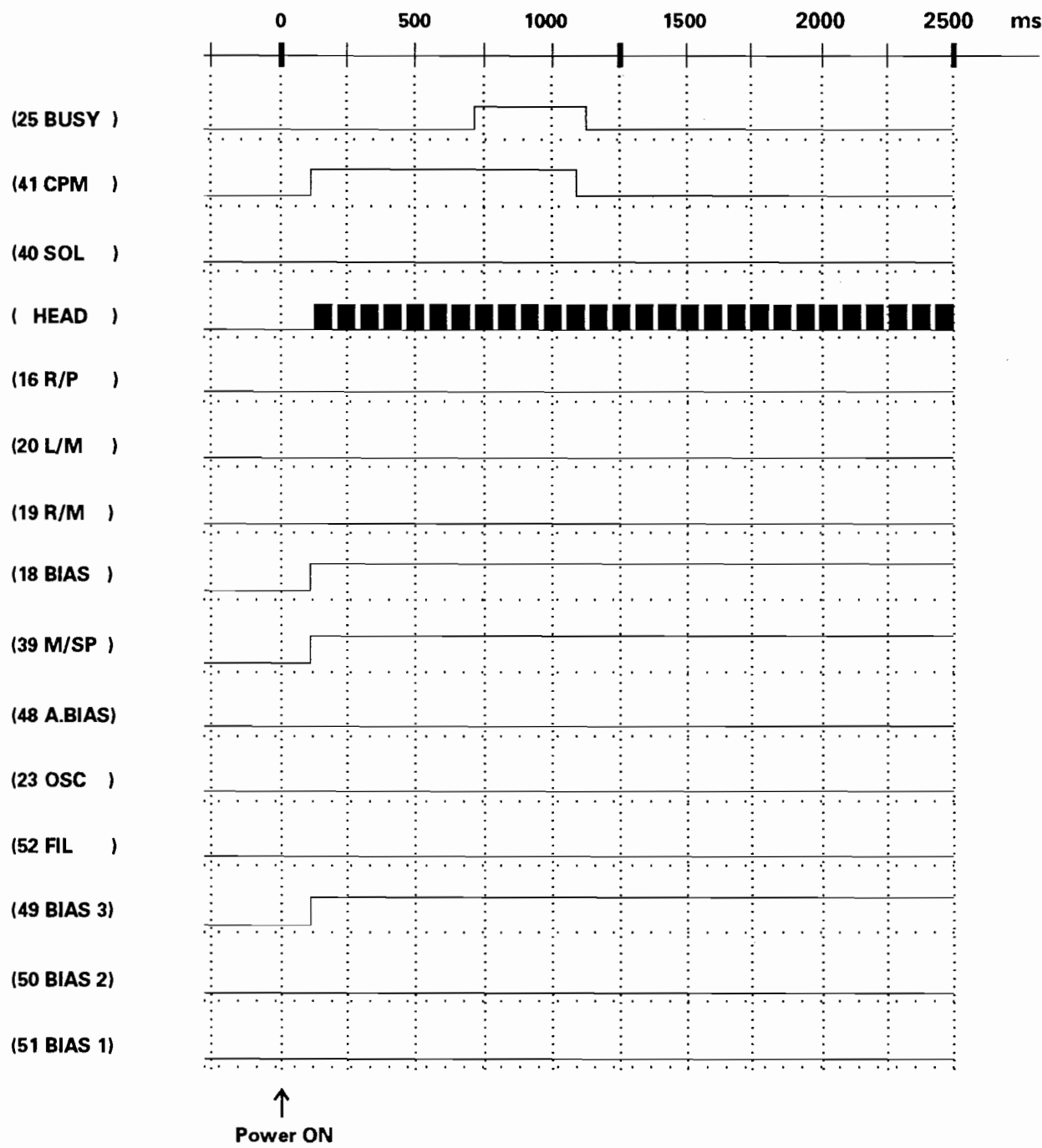
POWER→TIMER PLAY



KX-W6020

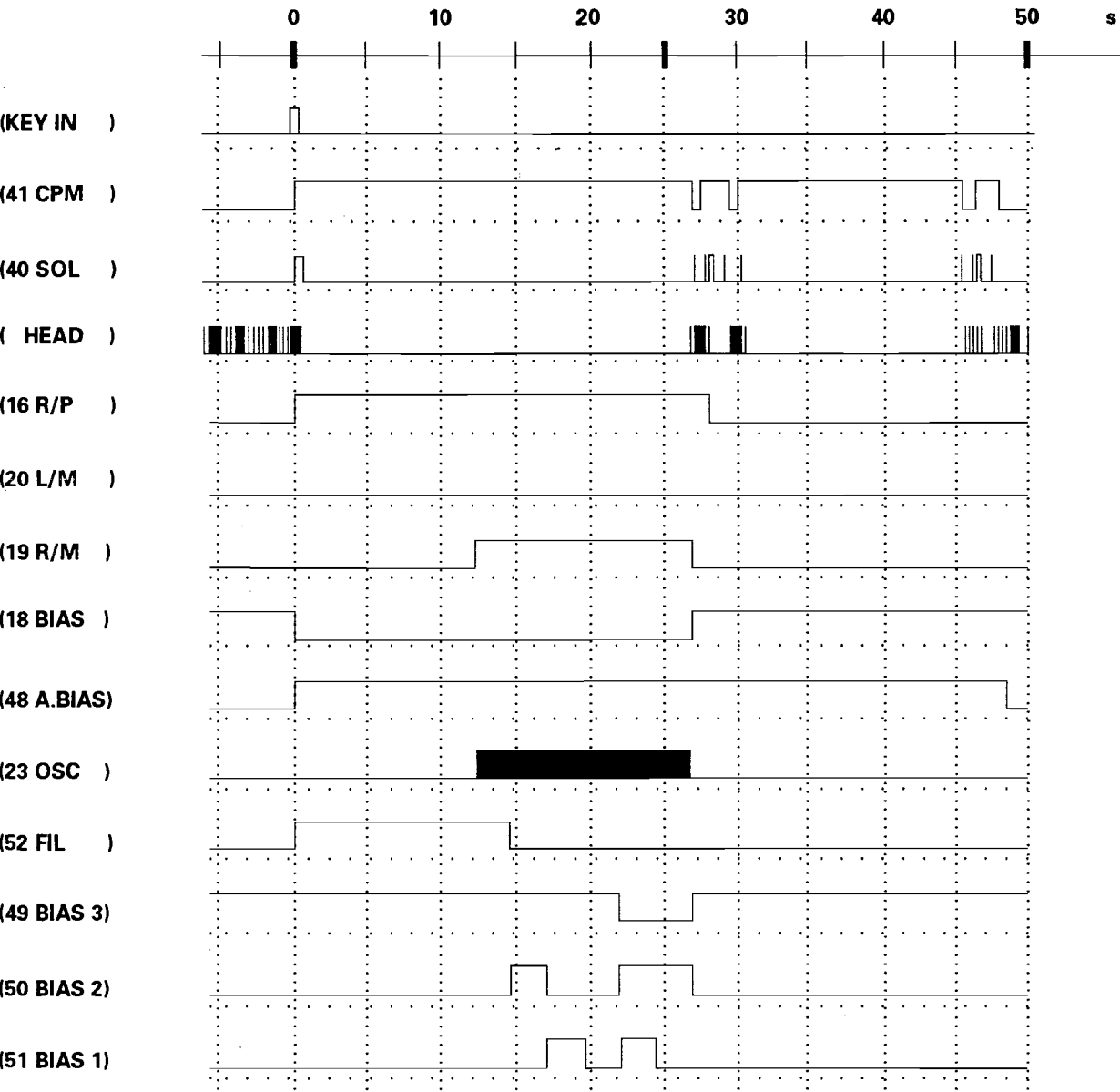
CIRCUIT DESCRIPTION

POWER OFF→STAND BY



CIRCUIT DESCRIPTION

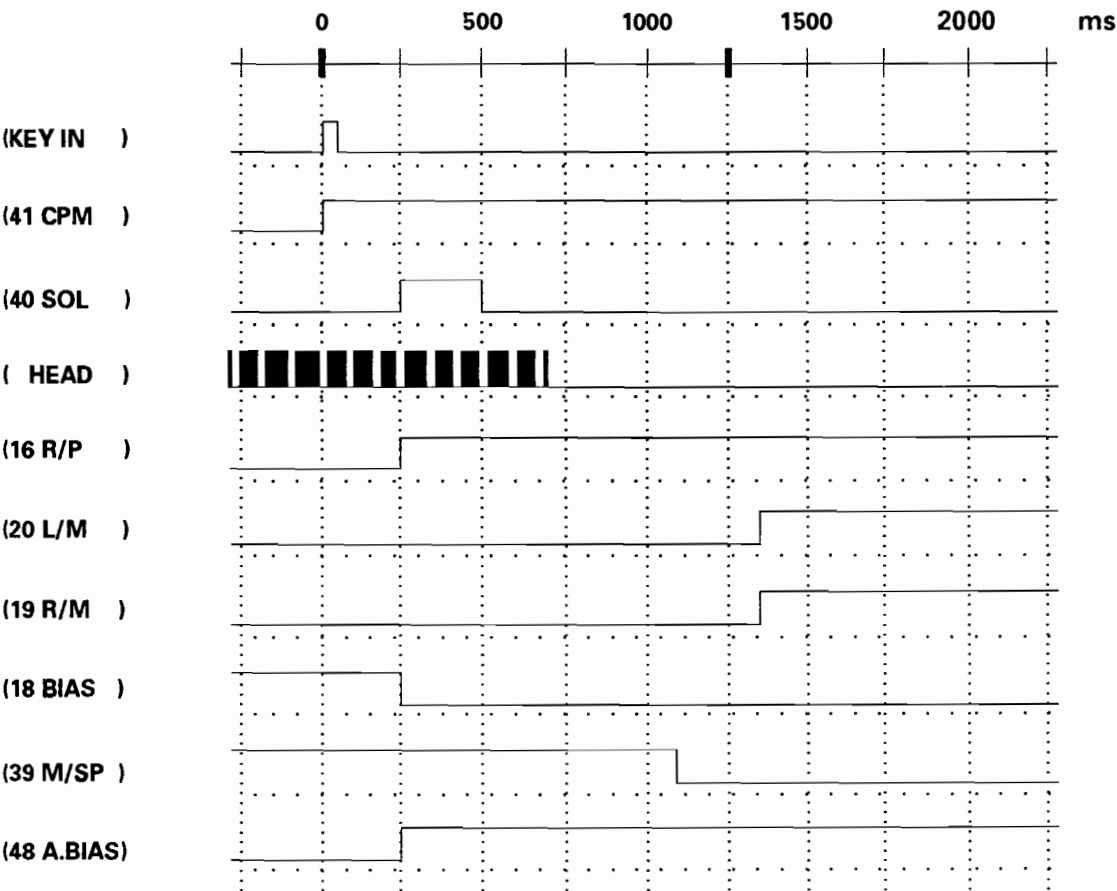
AUTO BIAS



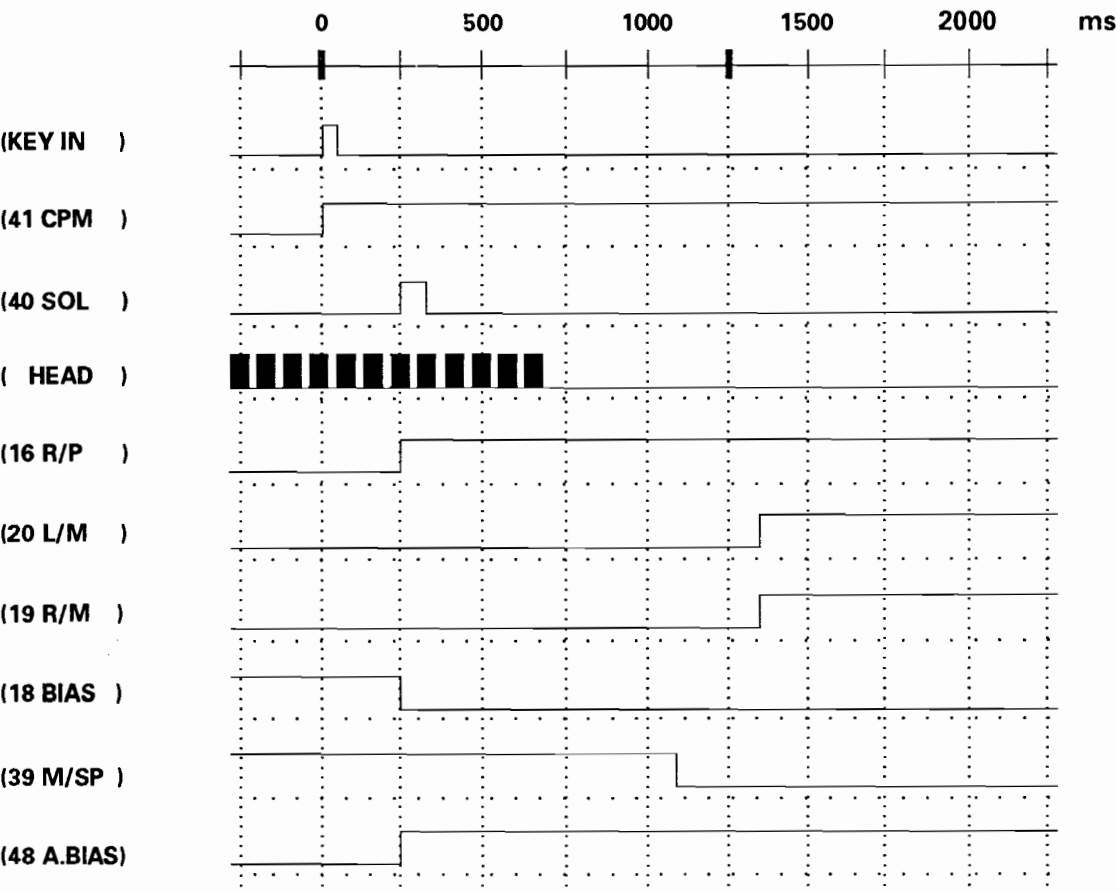
KX-W6020

CIRCUIT DESCRIPTION

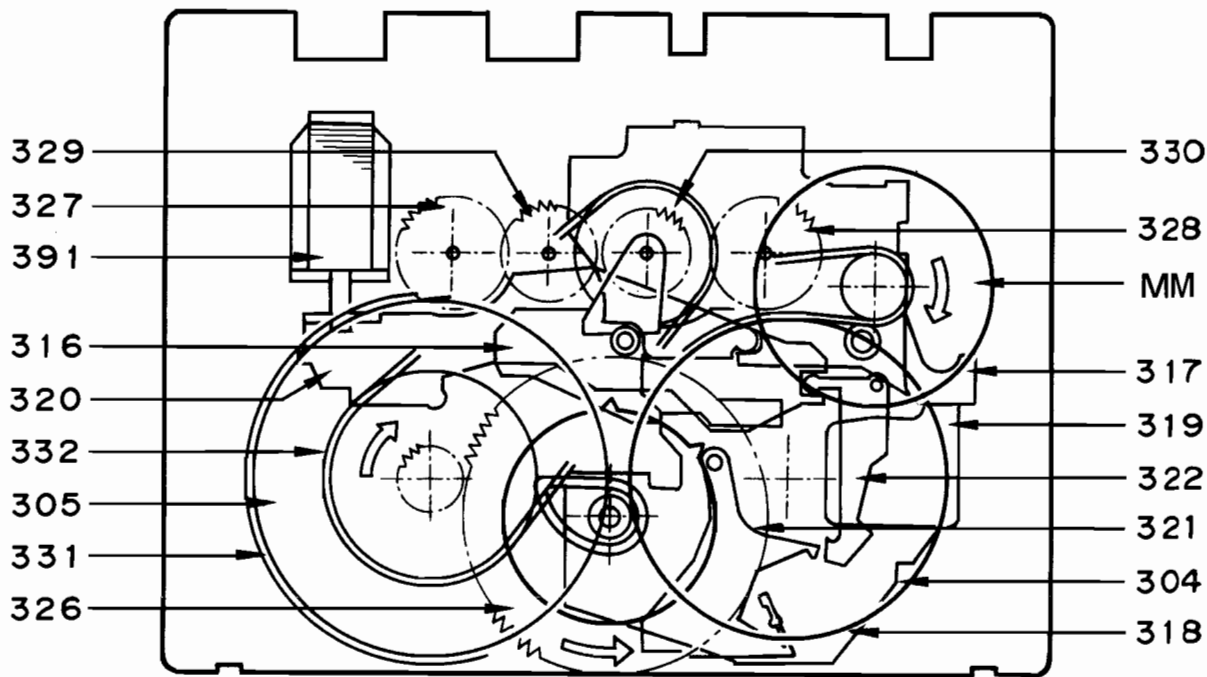
STOP→FWD REC (HI-SPEED)



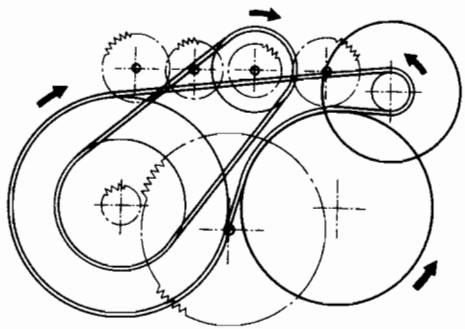
STOP→RVS REC (HI-SPEED)



MECHANISM DESCRIPTION



Pinch Roller Pressure:	220~320 g
Take-up Torque:	30~60 g·cm
FF. REW Torque:	70~125 g·cm
Back Tension Torque:	0.5~4.5 g·cm

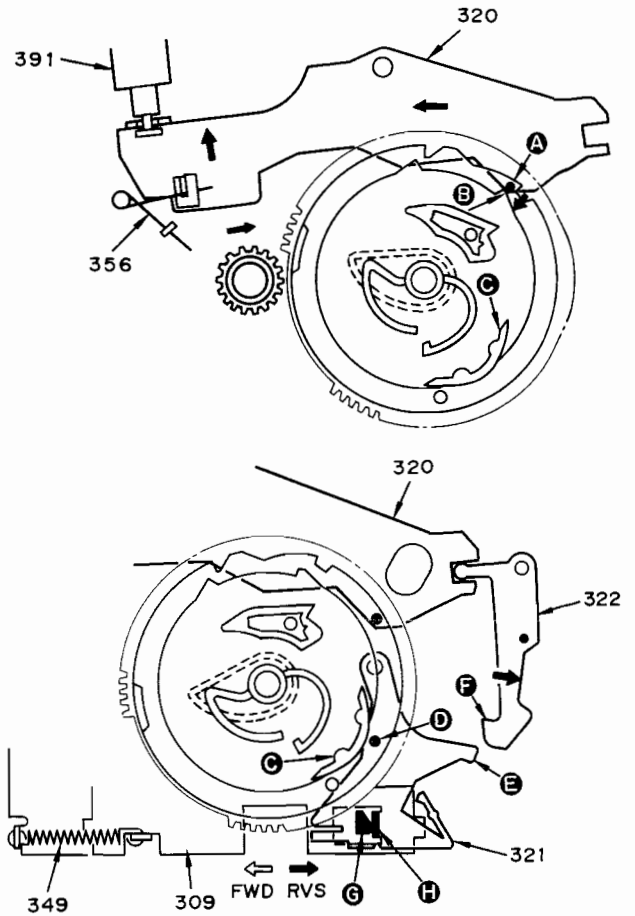


KX-W6020

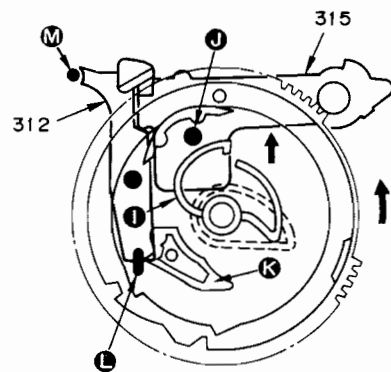
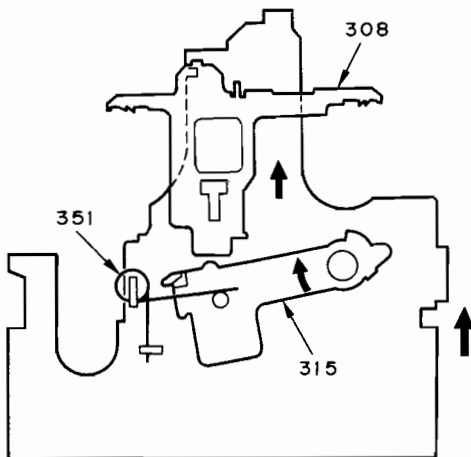
MECHANISM DESCRIPTION

STOP to FWD PLAY/REC

- (1) Solenoid is energized.
- (2) Trigger lever boss **A** is released.
- (3) Boss **A** pushes protrusion **B**.
- (4) Main gear engages with flywheel gear.
- (5) Cam **C** pushes F/R lever boss **D**.
- (6) Boss **G** pushes F/R rod claw **H**.
- (7) Solenoid is energized.
- (8) Since part **E** of the F/R lever is not locked with part **F** of the relay lever, the F/R rod is returned to the FWD position by the spring.
- (9) Solenoid is de-energized.



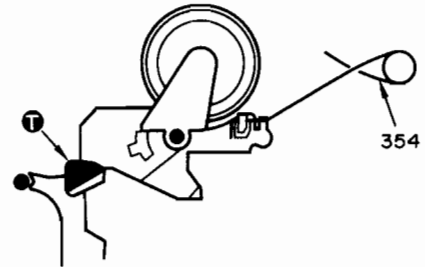
- (10) Main lever boss **J** is raised by cam **I**.
- (11) As the main lever rises, the brake rod and head base rise.



MECHANISM DESCRIPTION

(12) Cam **K** pushes lock lever boss **L**, and the main lever is locked.

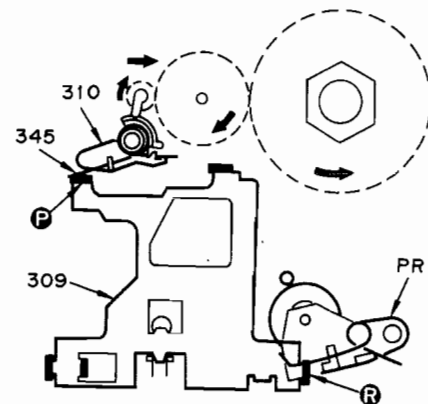
(13) Lock lever is locked by boss **M**.



(14) Fast forward arm is fixed by lock lever boss **T** and spring.

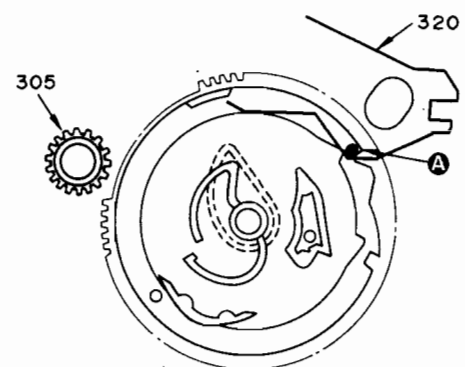
(15) As the head base rises, F/R rod claw **P** pushes the rewind arm.

(16) The relay gear is tilted and engages with the take-up hub gear; the hub starts rotating.



(17) F/R rod claw **R** pushes up the pinch roller spring, and the pinch roller presses against the capstan. Thus, FWD playback/recording occurs.

(18) The main gear continues to rotate, and trigger lever boss **A** touches the stop and reaches the FWD playback/recording position.



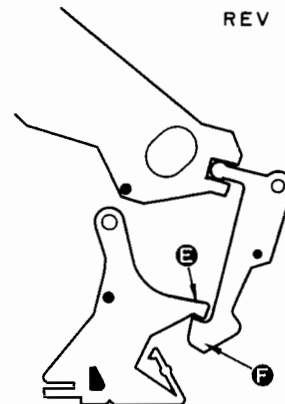
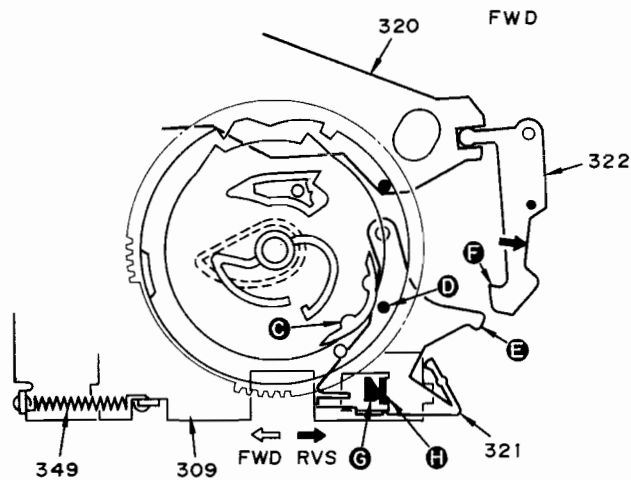
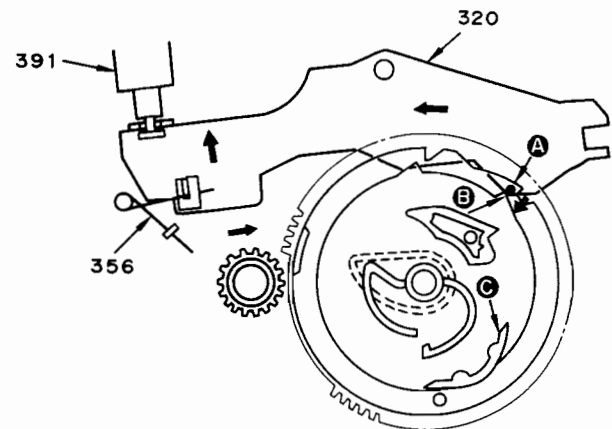
KX-W6020

MECHANISM DESCRIPTION

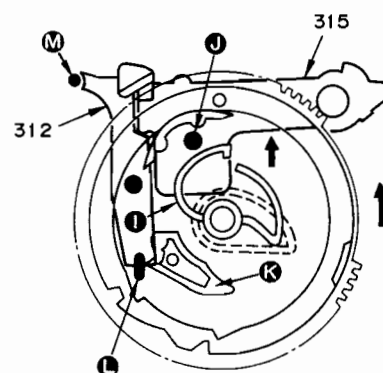
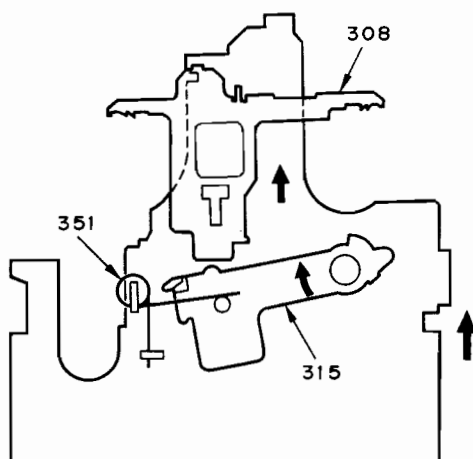
DRIVE MECHANISM DESCRIPTION

STOP to RVS PLAY/REC

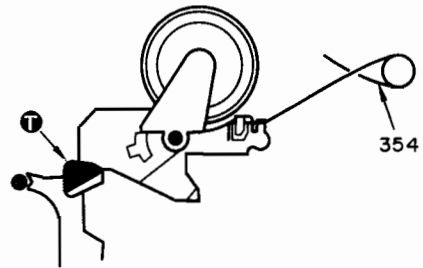
- (1) Solenoid is energized then de-energized.
- (2) Trigger lever boss **A** is released.
- (3) Boss **A** pushes protrusion **B**.
- (4) Main gear engages with flywheel gear.
- (5) Cam **C** pushes F/R lever boss **D**.
- (6) Boss **G** pushes F/R rod claw **H**.
- (7) Solenoid is de-energized.
- (8) Part **E** of the F/R lever locks with part **F** of the relay lever.
- (9) The F/R rod returns to the RVS position.



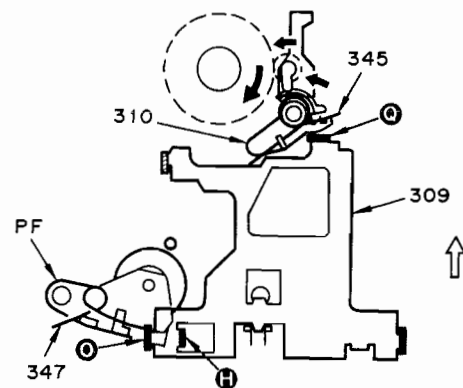
- (10) Main lever boss **J** is raised by cam **I**.
- (11) As the main lever rises, the brake rod and head base rise.



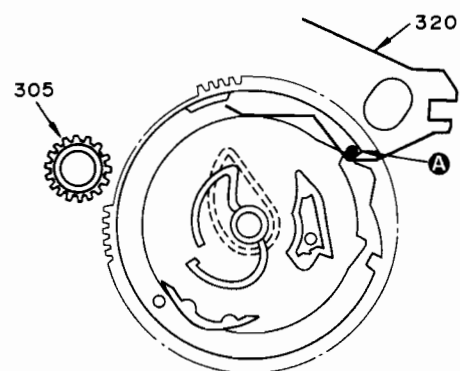
(13) Lock lever is locked by boss **M** .



(16) The relay gear is tilted and engages with the supply hub gear; the hub starts rotating.



(18) The main gear continues to rotate, and trigger lever boss **A** touches the stop and reaches the RVS playback/recording position.



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MECHANISM DESCRIPTION

STOP to FF/RWD

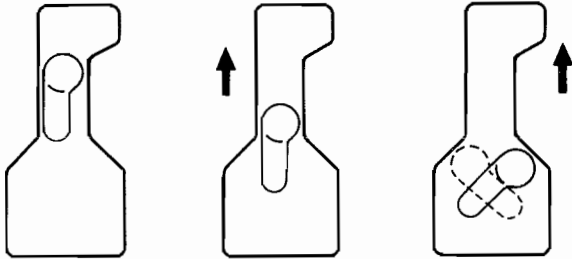
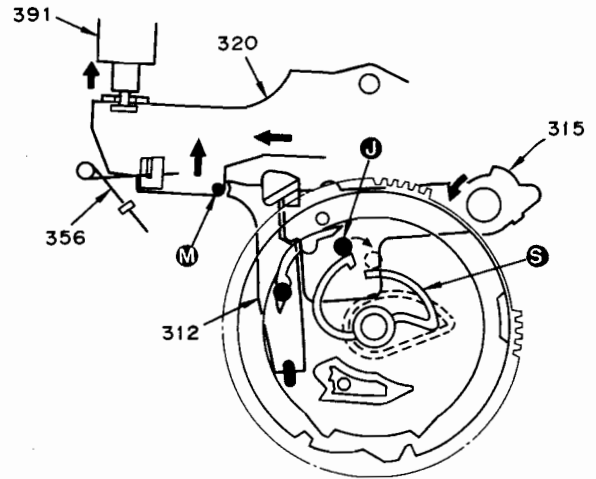
Steps 1 to 14 are the same as those for FWD PLAY.

(15) The solenoid is energized, and trigger lever boss **M** is disengaged from the lock lever. The solenoid is de-energized immediately for FF, but remains energized for RWD.

(16) Main lever is disengaged from lock lever.

(17) Main lever boss **U** goes down to the cam 8 position.

(18) The brake rod goes down to the position where the brake ceases to hold. The head base goes down to the FF/RWD position shown in the figure.



STOP

FF / RWD

FWP / RVS

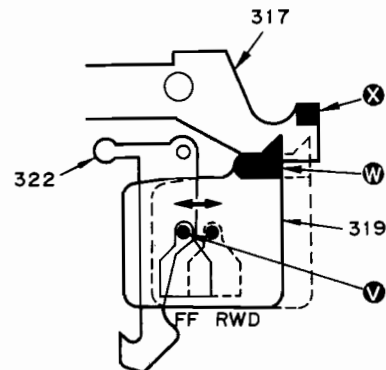
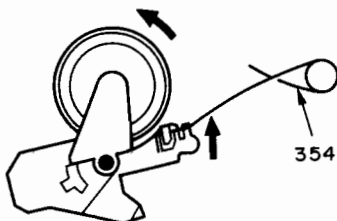
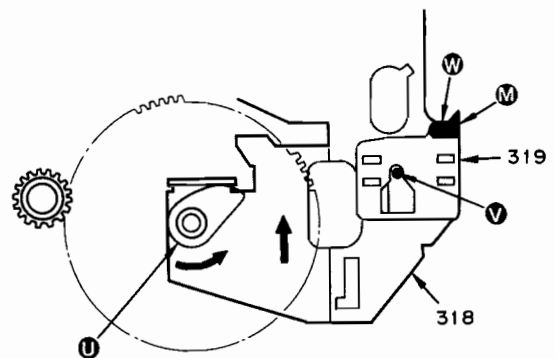
(19) Fast forward rod is lifted by main gear cam **U**.

(20) FF

(FF-1) The selection rod on the fast forward rod has been moved to the FF position by fast forward relay lever boss **V** because the solenoid is not energized.

(FF-2) The selection rod is lifted so that selection rod claw **W** does not hit fast forward boss **X**.

(FF-3) When the main gear rotates to the FF position, the fast forward arm is tilted to the FF direction by spring, and the hub starts rotating.



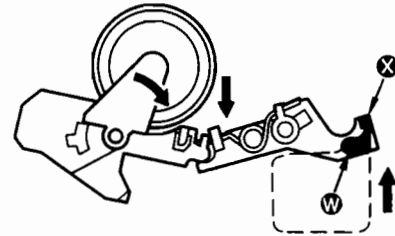
MECHANISM DESCRIPTION

(REW-1)

The selection rod is in the REW position because the solenoid is energized.

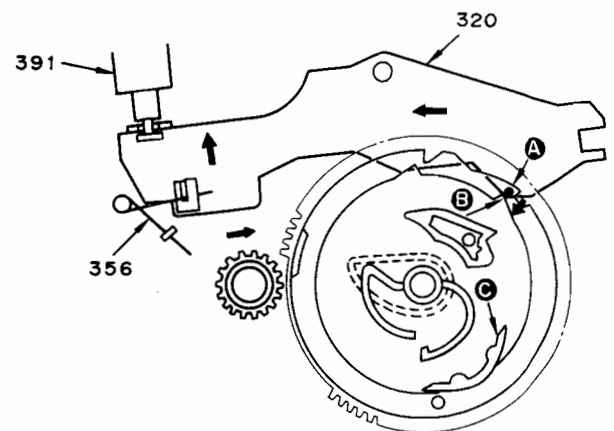
(REW-2)

When the fast forward rod rises, selection rod claw **W** touches fast forward lever boss **X**. The fast forward lever moves as shown in the figure below. The fast forward arm is tilted to the REW position, and the hub rotates.



→ STOP

- (1) Solenoid is energized.
- (2) All the locks are released, and the system returns to the STOP position (figure).
- (3) Trigger lever boss **A** stops at position of stop.



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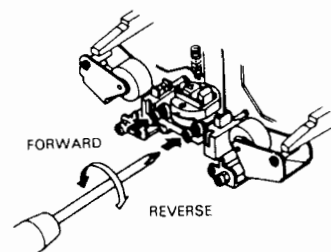
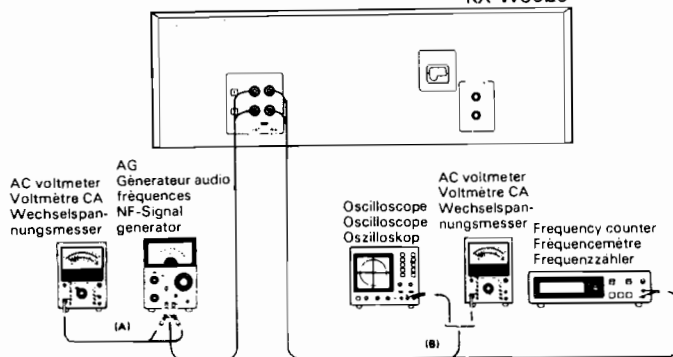
ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	CASSETTE TAPE DECK SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
CASSETTE DECK SECTION		TAPE: NORMAL, DOLBY: OFF, INPUT: LINE				0dBs = 0.775V	
I REC/PLAY HEAD							
[1]	DEMAGNETIZATION	--	--	POWER: OFF (Remove the cassette door.)	REC/PLAY head	Demagnetize the REC/PLAY head with a head demagnetizer.	
[2]	CLEANING	--	--	PLAY	REC/PLAY head erase head, capstan, pinch roller.	Clean the REC/PLAY head erase head, capstan and pinch roller using a cotton swab slightly damped with alcohol.	
[3]	AZIMUTH	MTT-114, TCC-153 SCC-1727 10kHz, -10dB	(B)	PLAY	Azimuth adjustment screw	Maximum output.	(a)
II PC BOARD							
(1)	TAPE SPEED (HI SPEED)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	Connect a jumper between GND and TP1/2 PLAY	DECK A: VR11 DECK B: VR12	Adjust the tape speed so that a 6kHz signal is produced at the center of the tape.	
(2)	TAPE SPEED (NORMAL)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	PLAY	DECK A: VR9 DECK B: VR10	Adjust the tape speed so that a 3kHz signal is produced at the center of the tape.	
III PC BOARD (X28-217X-XX, X87-1380-00)							
< 1 >	PLAYBACK LEVEL	MTT-150 400Hz(200nWb)	(B)	PLAY	DECK A: VR1(L) VR2(R) DECK B: VR3(L) VR4(R) (X28-217X-XX)	Output level: -6.5dBs	
		MTT-256 315Hz(160nWb)				Output level: -9.0dBs	
		MTT-256U, TCC-160 SCC-1727 315Hz(220nWb)				Output level: -5.5dBs	
< 2 >	BIAS CURRENT	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	Adjust REC level volume so that the REC monitor- output becomes -29dBs at 1kHz, then record and reproduce signal of 1kHz and 10kHz in alaternation.	DECK B: VR2(L) VR1(R) (X87-1380-00)	Record 1kHz and 10kHz in alternation and adjust the variable resistors which control the bias current so that the same playback level is obtained.	
< 3 >	BIAS OSCILLATING FREQUENCY	Load the non recorded tapes on Deck A and B.	Connect the AC voltmeter across TP1 and GND (L), or across TP2 and GND (R).	REC	DECK B: L3 (X87-1380-00)	Adjust to minimize both L and R readings.	(b)
< 4 >	BIAS LEAK	Load a non recorded tape on Deck A	(B)	Load a metal tape, and dub in a high speed mode.	L5(L) L6(R) (X28-217X-XX)	Minimum (Point)	

SYSTEM CONNECTIONS

KX-W6020

a) AZIMUTH ADJUSTMENT SCREW



REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU MAGNETO -PHONE A CASSETTE	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION DU MAGNETOPHONE TAPE: NORMAL, DOLBY: OFF, ENTREE: LINE 0dBs=0,775V							
I TETE D'ENREGISTREMENT/LECTURE							
[1]	DEMAGNETISATION	-	-	POWER: OFF Eloigner la porte.	Tête D'ENREGISTREMENT/ LECTURE	Demagnétiser la tête D'ENREGISTREMENT/LECTURE avec un démagnétiseur de tête.	
[2]	NETTOYAGE	-	-	PLAY	Tête D'ENREGISTREMENT/ LECTURE tête d'effacement, cabestan, galet presseur.	Nettoyer la tête D'ENREGISTREMENT/LECTURE la tête d'effacement, le cabestan et le galet presseur avec un coton-tige légèrement imbibé d'alcool.	
[3]	AZIMUT	SCC-1727 MTT-114, TCC-153 10kHz, -10dB	(B)	PLAY	Vis d'azimut	Sortie maximiser.	(a)
II PLAQUE IMPRIMEE							
(1)	VITESSE DE DEFILEMENT (HI SPEED)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	Connecter un cablage entre les GND et TP1/2 PLAY	DECK A: VR11 DECK B: VR12	Régler la vitesse de bande de façon qu'un signal de 6kHz soit produit au centre de la bande.	
(2)	VITESSE DE DEFILEMENT (NORMAL)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	PLAY	DECK A: VR9 DECK B: VR10	Régler la vitesse de bande de façon qu'un signal de 3kHz soit produit au centre de la bande.	
III PLAQUE IMPRIMEE (X28-217X-XX, X87-1380-00)							
<1>	NIVEAU DE LECTURE	MTT-150 400Hz(200nWb)	(B)	PLAY	DECK A: VR1(G) VR2(D) DECK B: VR3(G) VR4(D) (X28-217X-XX)	Niveau de sortie: -6,5dBs	
		MTT-256 315Hz(160nWb)				Niveau de sortie: -9,0dBs	
		MTT-256U, TCC-160 SCC-1727 315Hz(220nWb)				Niveau de sortie: -5,5dBs	
<2>	COURANT DE POLARISATION	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	Régler REC de volume de niveau façon que la sortie de moniteur REC soit de -29dBs à 1kHz, puis en registrer et reproduire des signaux de 1kHz et 10kHz en alternance.	DECK B: VR2(G) VR1(D) (X87-1380-00)	Enregistrer un signal de 1kHz et 10kHz en alternance et ajuster les résistances variables qui commandent le courant de polarité de façon à obtenir le même niveau de lecture.	
<3>	FREQUENCE D'OSCILLATION DE POLARISATION	Mettre en place des cassettes non enregistrées dans les platines A et B.		Raccorder le voltmètre CA entre TP1 et GND (L) ou entre TP2 et GND (R).	Enregistrement	DECK B: L3 (X87-1380-00)	Ajuster pour minimiser les affichages L et R. (b)
<4>	FUITE DE POLARISATION	Mettre en place une cassette non enregistrée dans la platine A	(B)		Mettre en place une bande metal et copier en mode de vitesse élevée.	L5(G) L6(D) (X28-217X-XX)	Minimum (point)

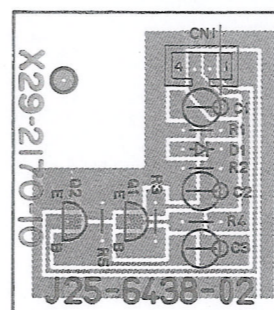
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	KASSETTENGÄRÄT EINSTELLUNG	ABGLEICH PUNKTE	ABGLEICHEN FÜR	ABB.
CASSETTEN-DECK-ABTEILUNG TAPE: NORMAL, DOLBY: OFF, EINGANG: LINE 0dBs=0,775V							
I AUFNAHME/WIEDERGABE KOPF							
[1]	ENTMAGNETISIERUNG	-	-	POWER: OFF Den Kassettenfach deckel oben herausziehen.	AUFNAHME/ WIEDERGABE-Kopf	Entmagnetisierung von dem AUFNAHME/WIEDERGABE-Kopf mit einem Tonkopf Entmagnetisierungsdrössel.	
[2]	REINIGUNG	-	-	PLAY	AUFNAHME/ WIEDERGABE-Kopf Loschkopf, Tonwelle, Andruckrolle.	AUFNAHME/WIEDERGABE-Kopf, Loschkopf, Tonwelle und Andruckrolle mit einem leicht mit Alkohol befeuch- teten Wattebausch reinigen.	
[3]	AZIMUT EINSTELLUNG	MTT-114, TCC-153 SCC-1727 10kHz, -10dB	(B)	PLAY	Azimuth- Einstellschraube	Maximal Ausgang.	(a)
II GEDRUCKTE SCHALTPLATTE							
(1)	BANDGESCH- WINDIGKEIT (HI SPEED)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	Einen Schalterdraht zwischen GND und TP1/2 anschießen. PLAY	DECK A: VR11 DECK B: VR12	Die Bandgeschwindigkeit so justieren, daß ein 6kHz Signal auf der Mitte des Bands erzeugt wird.	
(2)	BANDGESCH- WINDIGKEIT (NORMAL)	SCC-1727 MTT-111, TCC-110 3kHz -4dB	(B)	PLAY	DECK A: VR9 DECK B: VR10	Die Bandgeschwindigkeit so justieren, daß ein 3kHz Signal auf der Mitte des Bands erzeugt wird.	
III GEDRUCKTE SCHALTPLATTE (X28-217X-XX, X87-1380-00)							
<1>	WIEDERGABE- PEGEL	MTT-150 400Hz(200nWb)	(B)	PLAY	DECK A: VR1(L) VR2(R) DECK B: VR3(L) VR4(R) (X28-217X-XX)	Ausgangspegel: -6,5dBs	
		MTT-256 315Hz(160nWb)				Ausgangspegel: -9,0dBs	
		MTT-256U, TCC-160 SCC-1727 315Hz(220nWb)				Ausgangspegel: -5,5dBs	
<2>	LEERLAUFSTROM	(A) 1kHz, -30dBs 10kHz, -30dBs	(B)	REC so Pegel Lautstärke justieren, daß der REC Monitorausgang -29dBs bei 1kHz wird, und danach abwechselnd Signal von 1kHz und 10kHz aufnehmen und wiedergeben.	DECK B: VR2(L) VR1(R) (X87-1380-00)	Signale von 1kHz und 10kHz abwechselnd aufnehmen und die Regelwiderstände, die den Vormagnetisierungsstrom regeln, so justieren, daß der gleiche Wiedergabepegel erzielt wird.	
<3>	VORMAGNETISIERUNGS- OSZILLATIONS- FREQUENZ	Unbespielte Kassetten in Deck A und B einsetzen.		Das Wechselstrom- Voltmeter zwischen TP1 und GND (L) oder zwischen TP2 und GND (R) anschießen.	REC	DECK B: L3 (X87-1380-00)	So einstellen, daß die L- und die R-Anzeige minimal werden. (b)
<4>	VORMAGNETISIE- RUNGSSTREUNUNG	Eine unbespielte kassette in Deck A einsetzen.	(B)	Eine Metallband- kassette einsetzen und mit hoher Geschwindigkeit uberspielen.	L5(L) L6(R) (X28-217X-XX)	Minimum (Punkt)	

KX-W6020

WIRING DIAGRAM

[illegible]

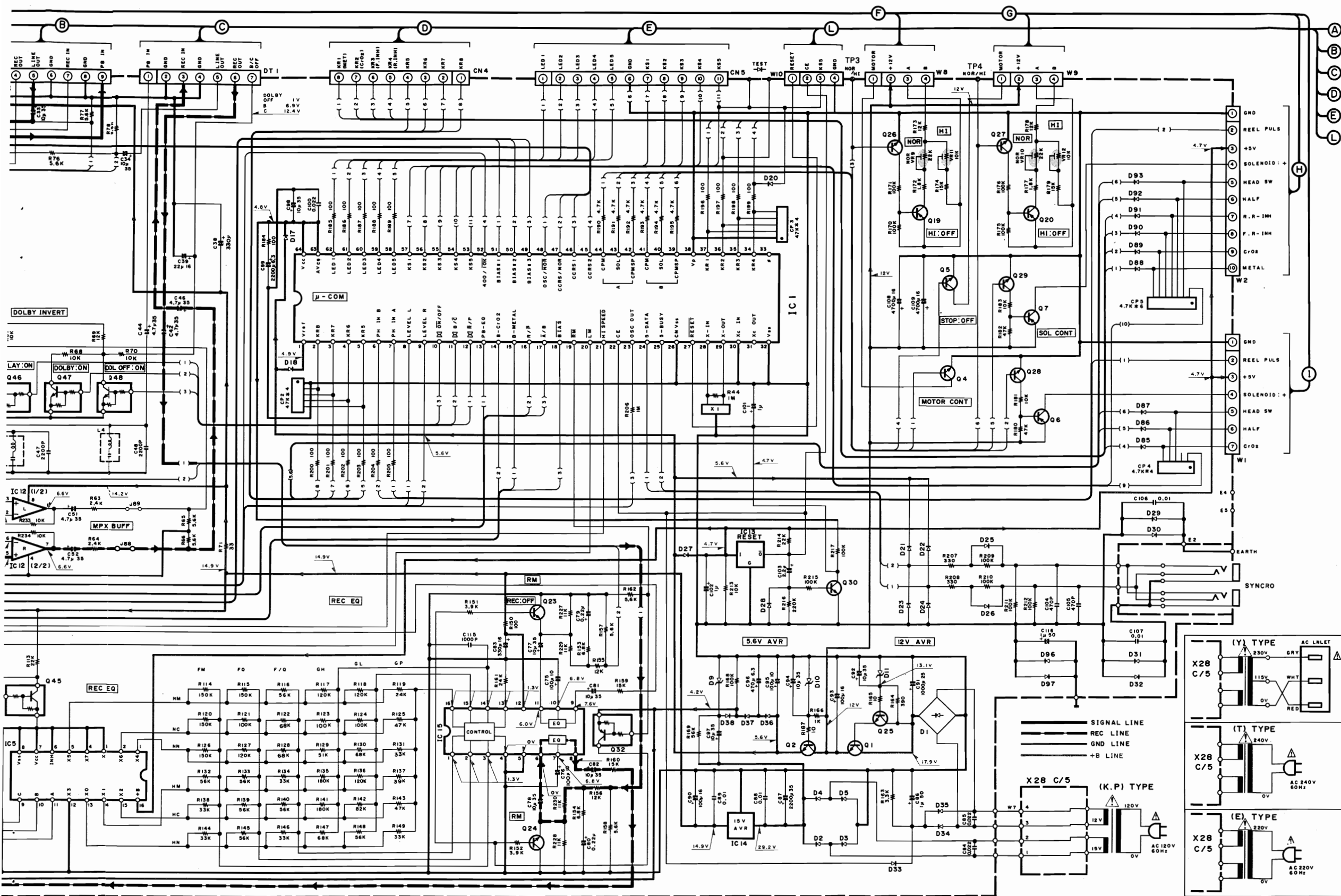


Ref. No.		Address
IC	Q	
	1	2M
	2	2K
	3	2K
1		2L

Ref. No.		Address
IC	Q	
1		4L

Ref. No.		Address
IC	Q	
	1	6L
	2	6L

Ref. No.		Address
IC	Q	
	1	6C
	2	6D
	4	6C
	5	6C
	6	6D
	7	6C
	8	1G
	9	2G
	10	1G
	11	1G
	12	2G
	13	1E
	14	1E
	15	4H
	16	4H
	19	6C
	20	6C
	21	4F
	22	4F
	23	4E
	24	4E
	25	6C
	26	6C
	27	6C
	28	6D
	29	6D
	30	6D
	31	4I
	32	4F
	33	6H
	34	6H
	35	5E
	36	7H
	37	6H
	38	6H
	39	6I
	40	6I
	41	7F
	42	7F
	43	
	45	
	46	5G
	47	5G
	48	5G
	49	6H
	50	6H
1		6E
2		6H
3		5F
4		6F
5		5E
7		7G
8		6I
9		7F
10		4F
11		1D
12		4H
13		6D
14		4C
15		4E
16		5F



- (X28-2170-10)
- IC 1 : M50941-338SP
 IC 2 : CXA1115BP
 IC 3,4 : TC4052BP
 IC 5 : TC4051BP
 IC 7~9 : TD62554S
 IC 10 : BA6138
 IC 12,16 : NJM4565D-D or NJM4565D-A
 IC 13 : PST529D
 IC 14 : AN78M15F
 IC 15 : CXA1198AP
- Q 1 : 2SD1266 (Q,P)
 Q 2 : 2SD8638 (E,F)
 Q 4,5 : 2SC3246
 Q 6,7 : 2SA1286
 Q 15,16 : 2SD1302 (S,T)
 Q 19,20 : 2SA733A (Q,P) or 2SA933S (Q,R)
 Q 21~30 : 2SC945A (Q,P) or 2SC1740S (Q,R)
 Q 31,32 : DTA124EN
 Q 33~42,45~50 : DTC124EN
- D 1 : KBP02ML-6127
 D 2~5 : S5566B
 D 6 : RD6.8ES (B2) or HZ56.8N (B2)
 D 7 : RD8.2JS (B2) or HZ56.2S (B2)
 D 12,13,15~38, D 59~79, D 85~95 : ISS133 or HSS104
 D 9 : RD4.7ES (B) or HZ54.7N (B)
 D 10 : RD6.2ES (B2) or HZ56.2N (B2)
 D 11 : RD13ES (B2) or HZ513N (B2)
 D 39~45, D 49~55 : B30-1288-05
 D 40~47, D 56~57 : B30-1290-05
 D 48, 58, D 80~84 : B30-1291-05

IC 5

PIN	HN	NC	NM	HN	NC	HM
(9)	4.7V	4.7V	4.7V	0V	0V	0V
(10)	0V	4.7V	0V	0V	4.7V	0V
(11)	0V	0V	4.7V	0V	0V	4.7V

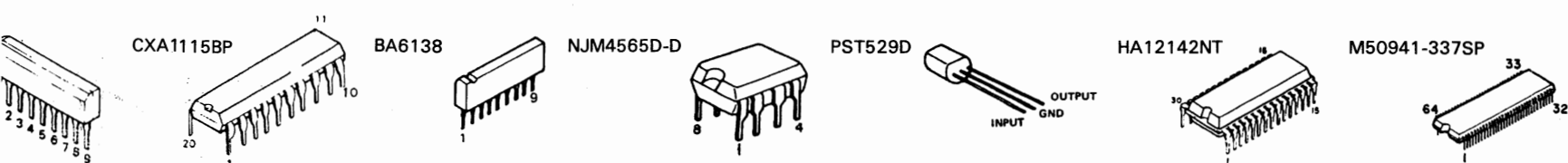
OH: PIN 1 PIN 2 PIN 3 PIN 15 PIN 16 PIN 14

DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode de lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

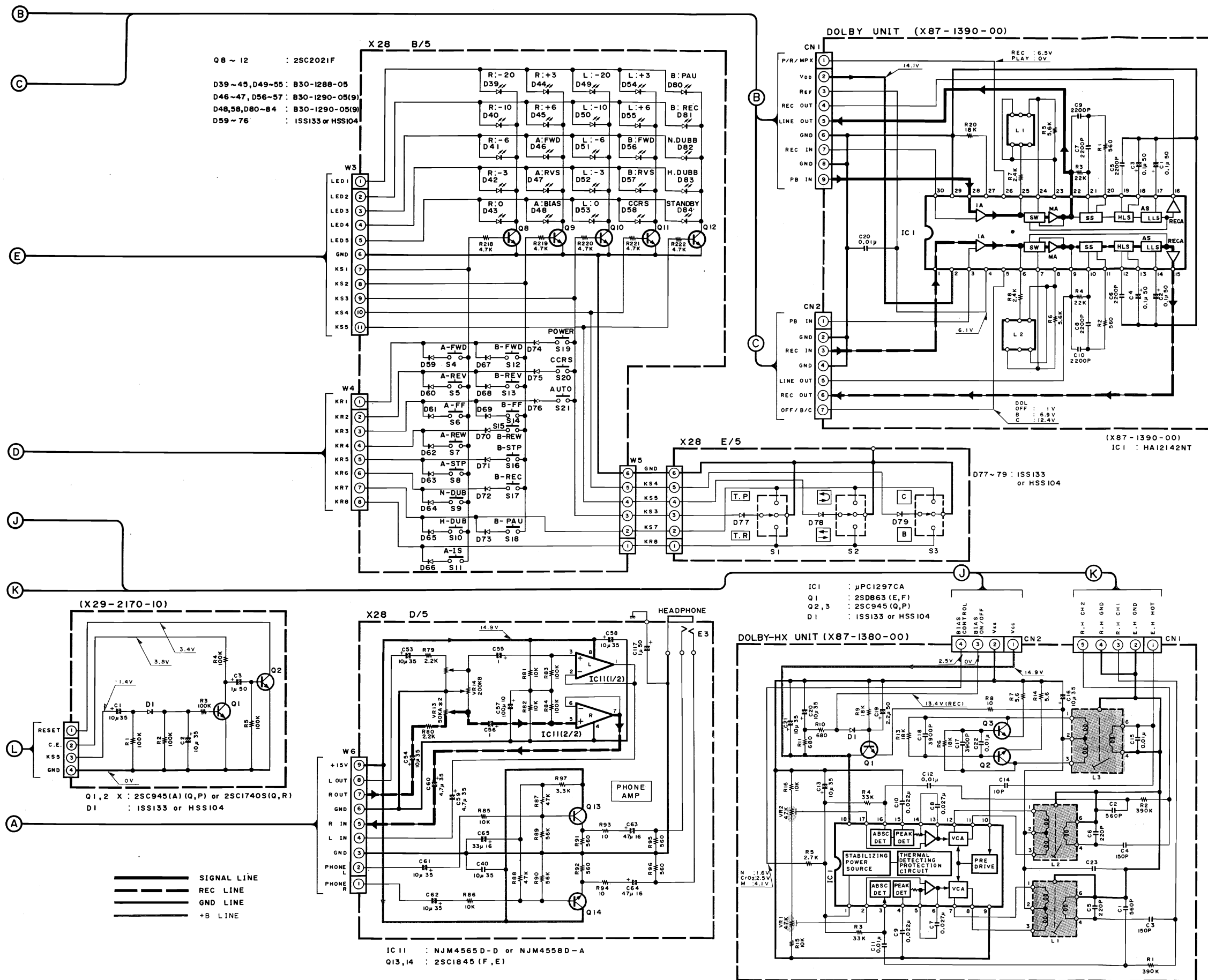
Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). **⚠** Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

Y26-3050-11

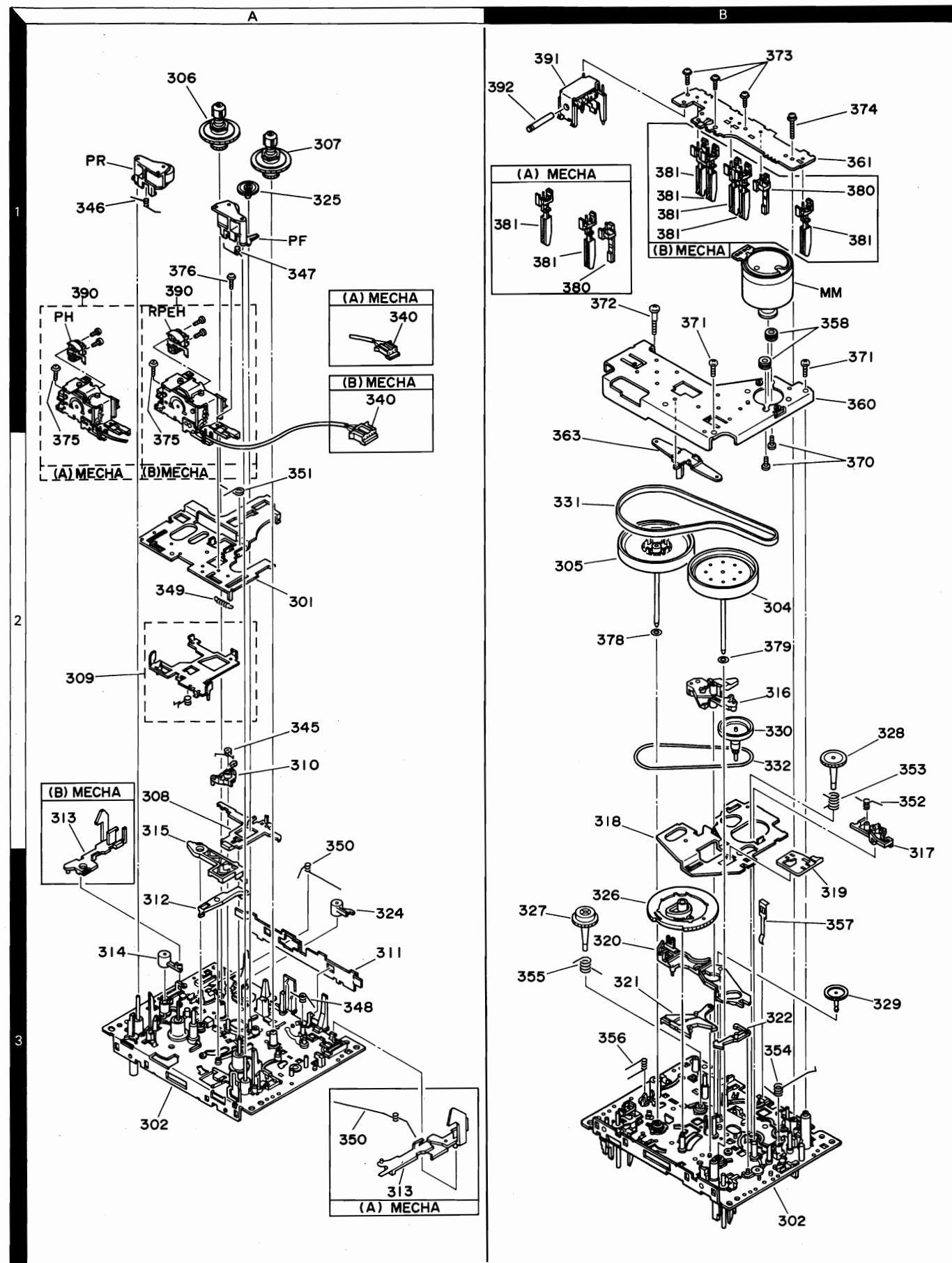
KX-W6020
KENWOOD



Y26-3050-11

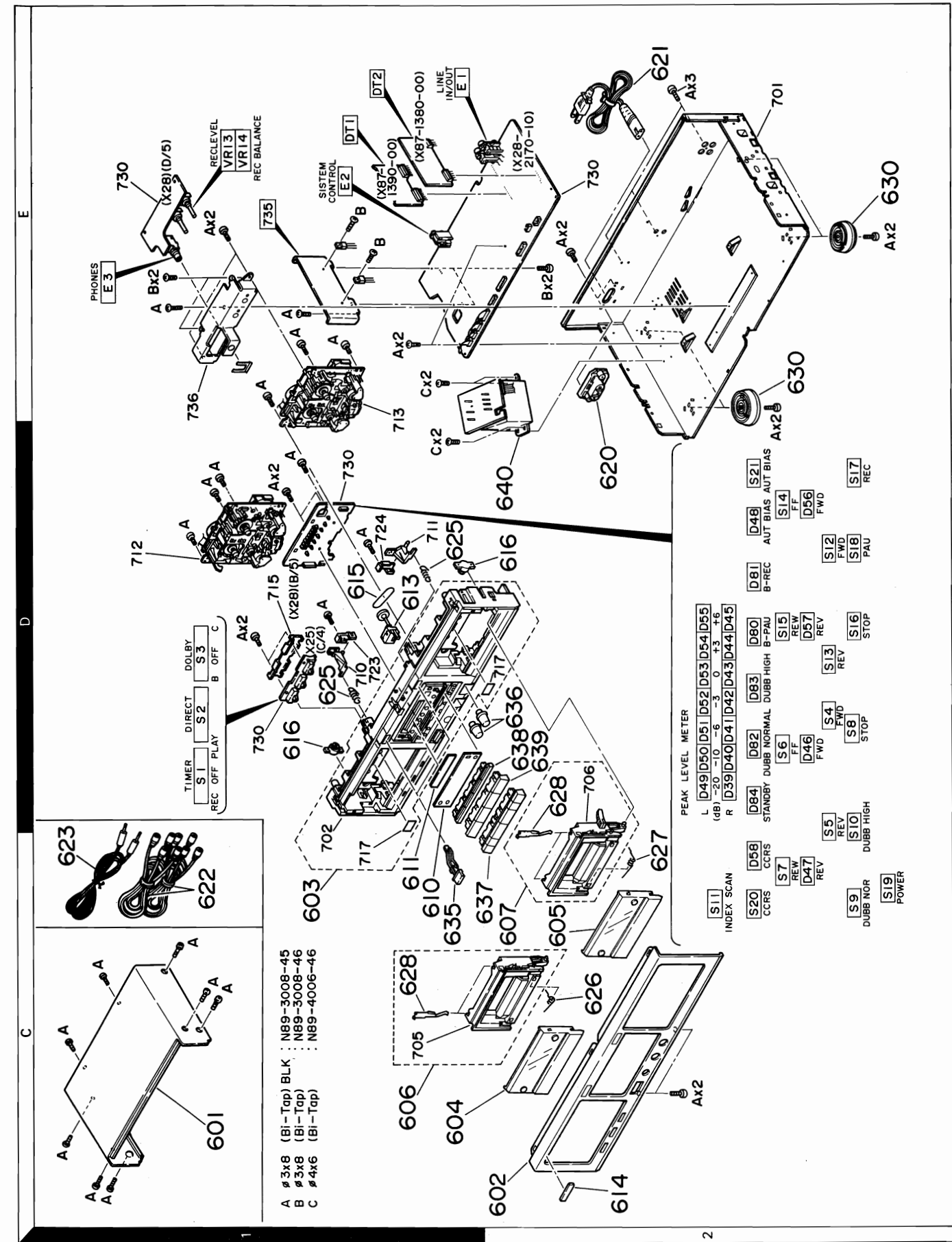
KX-W6020
KENWOOD

EXPLODED VIEW (MECHANISM)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

× New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
KX-W6020						
601	1C	*	A01-1855-01	METALLIC CABINET		
602	2C	*	A20-6003-02	PANEL		
603	1D	*	A22-1180-03	SUB PANEL ASSY		
604	1C, 2C	*	A53-1195-03	CASSETTE LID		A
605	2C	*	A53-1212-03	CASSETTE LID		B
606	1C	*	A53-1220-03	CASSETTE HOLDER ASSY		A
607	1C	*	A53-1222-03	CASSETTE HOLDER ASSY		B
610	1C, 1D	*	B03-2630-04	DRESSING PLATE		
611	1C, 1D	*	B03-2633-04	DRESSING PLATE		
613	1D	*	B35-0039-05	TAPE COUNTER		
614	2C	*	B43-0287-04	KENWOOD BADGE		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		*	B60-0008-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B60-0009-00	INSTRUCTION MANUAL (FRENCH)	PE	
-		*	B60-0010-00	INSTRUCTION MANUAL (GE, DE, IT)	E	
616	1D	*	D39-0176-05	DAMPER		
BC	1D	*	D16-0302-04	BELT		
△ 620	2E	*	E03-0102-25	AC INLET	Y	
△ 621	2E	*	E30-0181-05	AC POWER CORD	KP	
△ 621	2E	*	E30-0459-05	AC POWER CORD	E	
△ 621	2E	*	E30-1305-15	AC POWER CORD (INLET)	Y	
△ 621	2E	*	E30-1416-05	AC POWER CORD	T	
622	1C	*	E30-0505-05	AUDIO CORD		
623	1C	*	E30-1392-05	CORD WITH PLUG		
625	1D	*	G01-2426-04	EXTENSION SPRING		
626	2C	*	G01-2464-04	TORSION COIL SPRING		
627	2C	*	G01-2465-04	TORSION COIL SPRING		
628	1C, 1D	*	G02-0944-04	FLAT SPRING		
-		*	H01-8745-04	ITEM CARTON CASE		
-		*	H10-3944-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-3945-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H25-0232-04	PROTECTION BAG (235X350X0.03)		
-		*	H25-0330-04	PROTECTION BAG		
△ 630	2E	*	J02-1034-05	FOOT		
△ 631	2E	*	J42-0083-05	POWER CORD BUSHING	KPTE	
-		*	J61-0307-05	WIRE BAND		
635	1C, 1D	*	K29-3592-04	KNOB (EJECT)		
636	1D	*	K29-3886-04	KNOB (REC LEVEL, REC BALANCE)		
637	2C	*	K29-3905-03	KNOB (STOP, PAUSE, REC/ARM)		
638	2C, 2D	*	K29-3906-04	KNOB ASSY (FF, FR)		
639	2C, 2D	*	K29-3907-03	KNOB (PLAY)		
△ 640	2E	*	L07-0047-05	POWER TRANSFORMER	KP	
△ 640	2E	*	L07-0048-05	POWER TRANSFORMER	Y	
△ 640	2E	*	L07-0049-05	POWER TRANSFORMER	E	
△ 640	2E	*	L07-0050-05	POWER TRANSFORMER	T	

E: Scandinavia & Europe K: USA

P: Canada

Y: PX (Far East, Hawaii) T: England

M: Other Areas

Y: AAFES (Europe)

X: Australia

△ indicates safety critical components.

KX-W6020

PARTS LIST

※ New Parts

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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
A C	1C, 1D 2E		N89-3008-45 N89-4006-46	BINDING HEAD TAPTITE SCREW BINDING HEAD TAPTITE SCREW		
RECORD/PLAY BACK UNIT (X28-2170-10)						
D39 -45 D46 ,47 D48 D49 -55 D56 ,57		*	B30-1288-05 B30-1290-05 B30-1291-05 B30-1288-05 B30-1290-05	LED LED LED LED LED		
D58 D80 -84		*	B30-1291-05 B30-1291-05	LED LED		
C1 ,2 C3 ,4 C5 ,6 C7 -10 C11 ,12			CC45FSL1H181J CK45FB1H681K CK45FB1H821K CK45FB1H391K CE04KW1A101M	CERAMIC 180PF J CERAMIC 680PF K CERAMIC 820PF K CERAMIC 390PF K ELECTRO 100UF 10WV		
C13 ,14 C15 ,16 C17 ,18 C19 C20			CF92FV1H103J CF92FV1H473J CE04KW1V4R7M CE04KW1A101M CF92FV1H102J	MF 0.010UF J MF 0.047UF J ELECTRO 4.7UF 35WV ELECTRO 100UF 10WV MF 1000PF J		
C21 C22 C23 C25 ,26 C27 ,28			CF92FV1H473J CE04KW1V100M CE04KW1A101M CE04KW1H010M CC45FSL1H101J	MF 0.047UF J ELECTRO 10UF 35WV ELECTRO 100UF 10WV ELECTRO 1.0UF 50WV CERAMIC 100PF J		
C29 ,30 C31 ,32 C33 ,34 C37 C38			CE04KW1V4R7M CE04KW1H010M CE04KW1V100M CE04KW1H010M CE04KW1C331M	ELECTRO 4.7UF 35WV ELECTRO 1.0UF 50WV ELECTRO 10UF 35WV ELECTRO 1.0UF 50WV ELECTRO 330UF 16WV		
C39 C40 C41 -46 C47 ,48 C49 -52			CE04KW1C220M CE04KW1V100M CE04KW1V4R7M CK45FB1H222K CE04KW1V4R7M	ELECTRO 22UF 16WV ELECTRO 10UF 35WV ELECTRO 4.7UF 35WV CERAMIC 2200PF K ELECTRO 4.7UF 35WV		
C53 ,54 C55 ,56 C57 C58 C59 ,60			CE04KW1V100M CE04KW1H010M CE04KW1A101M CE04KW1V100M CE04KW1V4R7M	ELECTRO 10UF 35WV ELECTRO 1.0UF 50WV ELECTRO 100UF 10WV ELECTRO 10UF 35WV ELECTRO 4.7UF 35WV		
C61 ,62 C63 ,64 C65 C75 ,76 C77 ,78			CE04KW1V100M CE04KW1C470M CE04KW1C330M CE04KW1A101M CE04KW1V100M	ELECTRO 10UF 35WV ELECTRO 47UF 16WV ELECTRO 33UF 16WV ELECTRO 100UF 10WV ELECTRO 10UF 35WV		
C79 ,80 C81 ,82 C83 C84 ,85 C86			CE04KW1HR22M CE04KW1V100M CE04KW1C331M CK45FF1H223Z CE04KW1V100M	ELECTRO 0.22UF 50WV ELECTRO 10UF 35WV ELECTRO 330UF 16WV CERAMIC 0.022UF Z ELECTRO 10UF 35WV		
C87 C88 ,89 C90 C91			CE04KW1V222M CF92FV1H103J CE04KW1C101M CE04KW1E102M	ELECTRO 2200UF 35WV MF 0.010UF J ELECTRO 100UF 16WV ELECTRO 1000UF 25WV		

E: Scandinavia & Europe K: USA


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C92			CE04KW1V100M	ELECTRØ 10UF 35WV		
C93			CE04KW1C101M	ELECTRØ 100UF 16WV		
C94			CE04KW1V100M	ELECTRØ 10UF 35WV		
C95			CE04KW1A101M	ELECTRØ 100UF 10WV		
C96			CE04KW0J471M	ELECTRØ 470UF 6.3WV		
C97 ,98			CE04KW1V100M	ELECTRØ 10UF 35WV		
C99			CE04KW0J222M	ELECTRØ 2200UF 6.3WV		
C100			CK45FF1H223Z	CERAMIC 0.022UF Z		
C101-103			CE04KW1H010M	ELECTRØ 1.0UF 50WV		
C104,105			CK45FB1H471K	CERAMIC 470PF K		
C106,107			CK45FF1H103Z	CEPAMIC 0.010UF Z		
C108,109			CE04KW1C472M	ELECTRØ 4700UF 16WV		
C110,111			CF92FV1H102J	MF 1000PF J		
C112			CE04KW1V100M	ELECTRØ 10UF 35WV		
C113			CF92FV1H333J	MF 0.033UF J		
C114			CF92FV1H333J	MF 0.033UF J		
C115			CF92FV1H102J	MF 1000PF J		
C116			CE04KW1H010M	ELECTRØ 1.0UF 50WV		
E1			E13-0445-05	PHONE JACK (4P)		
E2			E11-0188-05	MINIATURE PHONE JACK		
E3		*	E11-0199-05	PHONE JACK		
E4 ,5			J11-0098-05	WIRE CLAMPER		
L3 ,4			L39-0126-05	TRAP COIL		
L5 ,6		*	L39-0194-05	TRAP COIL		
X1			L78-0244-05	RESONATOR		
B	1E,2E		N89-3008-46	BINDING HEAD TAPTITE SCREW		
CP1 -3			R90-0487-05	MULTI-COMP 47KX4 J 1/6W		
CP4			R90-0824-05	MULTIPLE RESISTOR		
CP5			R90-0811-05	MULTIPLE RESISTOR		
VR1 -4			R12-3128-05	TRIM POT. 22K		
VR9 ,10			R12-3128-05	TRIM POT. 22K		
VR11,12			R12-3126-05	TRIM POT. 10K		
VR13		*	R06-4083-05	POTENTIOMETER(50K X2)		
VR14		*	R01-5073-05	POTENTIOMETER(200K)		
K1			S51-2089-05	MAGNETIC RELAY		
S1 -3			S31-1033-05	SLIDE SWITCH		
S4 -21			S40-1064-05	PUSH SWITCH		
D1			KBPO2ML-6127	DIODE		
D2 -5			S5566B	DIODE		
D6			HZS6.8N(B2)	ZENER DIODE		
D6			RD6.8ES(B2)	ZENER DIODE		
D7			HZS8.2S(B2)	ZENER DIODE		
D7			RD8.2JS(B2)	ZENER DIODE		
D8			HSS104	DIODE		
D8			1SS133	DIODE		
D9			HZS4.7N(B)	ZENER DIODE		
D9			RD4.7ES(B)	ZENER DIODE		
D10			HZS6.2N(B2)	ZENER DIODE		
D10			RD6.2ES(B2)	ZENER DIODE		
D11			HZS13N(B2)	ZENER DIODE		
D11			RD13ES(B2)	ZENER DIODE		
D12 ,13			HSS104	DIODE		

E: Scandinavia & Europe K: USA

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△ 印は安全部品

△ indicates safety critical components.

KX-W6020

PARTS LIST

× New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
D12 ,13 D15 -18 D15 -18 D20 -38 D20 -38			1SS133 HSS104 1SS133 HSS104 1SS133	DIODE DIODE DIODE DIODE DIODE		
D59 -79 D59 -79 D85 -97 D85 -97 IC1			HSS104 1SS133 HSS104 1SS133 M50941-337SP	DIODE DIODE DIODE DIODE IC(MICROPROCESSOR)		
IC2 IC3 ,4 IC5 IC7 -9 IC10			CXA1115BP TC4052BP TC4051BP TD62554S BA6138	IC(PLAY/BACK AMP) IC(4CH MPX/DE-MPX) IC(8CH MPX/ DE-MPX) IC(4CH TRANSISTOR ARRAY) IC(ROOT AMP X2)		
IC11,12 IC11,12 IC13 IC14 IC15			NJM4558D-A NJM4565D-D PST529D AN78M15F CXA1198AP	IC(OP AMP X2) IC IC(CONTROL) IC IC(CASSETTE DECK REC EQUALIZER)		
IC16 IC16 Q1 Q2 Q4 ,5			NJM4558D-A NJM4565D-D 2SD1266(Q,P) 2SD863(E,F) 2SC3246	IC(OP AMP X2) IC TRANSISTOR TRANSISTOR TRANSISTOR		
Q6 ,7 Q8 -12 Q13 ,14 Q15 ,16 Q19 ,20			2SA1286 2SC2021F 2SC1845(F,E) 2SD1302(S,T) 2SA733(A)(Q,P)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q19 ,20 Q21 -30 Q21 -30 Q31 ,32 Q33 -42			2SA933S(Q,R) 2SC1740S(Q,R) 2SC945(A)(Q,P) DTA124EN DTC124EN	TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
Q45 -50			DTC124EN	DIGITAL TRANSISTOR		
DOLBY HX UNIT (X87-1380-00)						
C1 ,2 C3 ,4 C5 ,6 C7 ,8 C9 ,10			CK45FB1H561K C91-0357-05 C91-0359-05 CF92FV1H273J CK45FF1H223Z	CERAMIC 560PF K POLYSTY 150PF J POLYSTY 220PF J MF 0.027UF J CERAMIC 0.022UF Z		
C11 ,12 C13 C14 C15 C16			CK45FF1H103Z CE04KW1V100M CC45FSL2H100D CQ93HP2A103J CE04KW1V100M	CERAMIC 0.010UF Z ELECTRO 10UF 35WV CERAMIC 10PF D MYLAR 0.010UF J ELECTRO 10UF 35WV		
C17 ,18 C19 C20 ,21 C22			CF92FV1H392J CE04KW1H2R2M CE04KW1V100M CF92FV1H103J	MF 3900PF J ELECTRO 2.2UF 50WV ELECTRO 10UF 35WV MF 0.010UF J		
L1 ,2 L3			L32-0377-05 L32-0389-05	BIAS OSCILATING COIL BIAS OSCILATING COIL		

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VR1 ,2			R12-3133-05	TRIM POT. 47K		
D1			HSS104	DIODE		
D1			1SS133	DIODE		
IC1			UPC1297CA	IC(DOL HX PRO SYSTEM)		
Q1			2SD863(E,F)	TRANSISTOR		
Q2 ,3			2SC945(A)(Q,P)	TRANSISTOR		
DOLBY UNIT (X87-1390-00)						
C1 -4			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C5 -10			CF92FV1H222J	MF 2200PF J		
C20			CK45FF1H103Z	CERAMIC 0.010UF Z		
L1 ,2			L79-0720-05	LC FILTER		
IC1		*	HA12142NT	IC(DOLBY B/C NOISE REDUCTION)		
MECHANISM ASS'Y (D40-0912-05: A, 3-05: B)						
301	2A	*	A10-2725-08	HEAD CHASSIS CALKED ASSY		
302	3A,3B	*	A10-2727-08	CHASSIS CALKED ASSY		
304	2B		D01-0121-08	FLYWHEEL ASSY		
305	2B	*	D01-0123-08	FLYWHEEL ASSY		
306	1A	*	D03-0283-08	SUPPLY REEL DISK ASSY		
307	1A	*	D03-0284-08	REEL DISK ASSY		
308	2A,3A	*	D03-0285-08	BLAKE LOD		
309	2A	*	D10-2438-08	F,R ROD		
310	2A	*	D10-2439-08	REWIND ARM		
311	3A	*	D10-2440-08	SWITCH LEVER		
312	3A	*	D10-2441-08	LOCK LEVER		
313	2A,3A	*	D10-2442-08	EJECT ROD		A
313	2A,3A	*	D10-2454-08	EJECT ROD		B
314	3A	*	D10-2443-08	DAMPER ARM		
315	3A	*	D10-2444-08	MAIN LEVER		
316	2B	*	D10-2446-08	FF ARM		
317	2B,3B	*	D10-2447-08	FF LEVER		
318	2B,3B	*	D10-2448-08	FF ROD		
319	3B	*	D10-2449-08	FF SELECT ROD		
320	3B	*	D10-2450-08	TRIGGER LEVER		
321	3B	*	D10-2451-08	F,R LEVER		
322	3B	*	D10-2452-08	FF LEVER		
324	3A	*	D10-2453-08	DAMPER ARM		
325	1A	*	D13-0882-08	GEAR ASSY		
326	3B	*	D13-0883-08	MAIN GEAR ASSY		
327	3B	*	D13-0884-08	REEL GEAR ASSY		
328	2B	*	D13-0885-08	REEL GEAR ASSY		
329	3B	*	D13-0886-08	FF GEAR ASSY		
330	2B	*	D15-0311-08	MAIN PULLEY ASSY		
331	2B	*	D16-0304-08	CAPSTAN BELT		
332	2B	*	D16-0306-08	FF BELT		
PF	1A	*	D14-0321-08	PINCH ROLLER ASSY		
PR	1A	*	D14-0320-08	PINCH ROLLER ASSY		
340	1A,2A	*	E31-7725-08	CONNECTING WIRE		A
340	1A,2A	*	E31-7726-08	CONNECTING WIRE		B
345	2A	*	G01-2485-08	REWIND ARM SPRING		
346	1A	*	G01-2486-08	PINCH ARM SPRING		
347	1A	*	G01-2487-08	PINCH ARM SPRING		

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348	3A	*	G01-2488-08	HEAD SPRING		
349	2A	*	G01-2489-08	F,R ROD SPRING		
350	3A	*	G01-2490-08	EJECT ROD SPRING		A
350	3A	*	G01-2497-08	EJECT ROD SPRING		B
351	2A	*	G01-2491-08	HEAD UNIT SPRING		
352	2B	*	G01-2492-08	FF LEVER SPRING		
353	2B	*	G01-2493-08	BACK TENSION SPRING		
354	3B	*	G01-2494-08	FF ROD SPRING		
355	3B	*	G01-2495-08	BACK TENSION SPRING		
356	3B	*	G01-2496-08	TRIGGER LEVER SPRING		
357	3B	*	G02-0969-08	FLAT SPRING		
358	1A	*	G11-2024-08	CUSHION		
360	1B	*	J21-5622-08	FLYWHEEL MOUNTING HARDWARE		
361	1B	*	J25-6439-08	PRINTED WIRING BOARD (SWITCH)		A
361	1B	*	J25-6440-08	PRINTED WIRING BOARD (SWITCH)		B
363	1B,2B	*	J30-0277-08	SPACER		
370	1B,2B	*	N09-2780-08	SCREW (MOTOR)		
371	1B	*	N09-2795-08	SCREW (M2.6X7)		
372	1B	*	N09-2796-08	SCREW (M2.6X16)		
373	1B	*	N09-2797-08	SCREW (M2X8)		
374	1B	*	N09-2798-08	SCREW (M2X16)		
375	1A	*	N90-2006-46	SCREW (M2X6)		
376	1A	*	N90-2008-46	SCREW (M2X8)		
378	2B	*	N19-1247-08	FLAT WASHER		
379	2B	*	N19-1248-08	FLAT WASHER		
380	1B	*	S46-1136-08	LEAF SWITCH(MODE)		
381	1B	*	S46-1137-08	LEAF SWITCH(HALF, Cr02)		A
381	1B	*	S46-1137-08	LEAF SWITCH(HALF, ERA, Cr0, META)		B
390	1A	*	T31-0060-08	HEAD BLOCK ASSY		A
390	1A	*	T39-0013-08	HEAD BLOCK ASSY		B
391	1B	*	T94-0220-08	SOLENOID (PLUNGER)		
392	1B	*	T94-0221-08	SOLENOID (CORE)		
MM	1B	*	T42-0568-08	DC MOTOR ASSY		
PH	1A	*	T31-0061-08	PLAY BACK HEAD		A
RPEH	1A	*	T39-0014-08	REC,PLAY,ERASE HEAD		B
(X29-2170-10)						
C1,2			CE04KW1V100M	ELECTRO 10μF 35WV		
C3			CE04KW1H010M	ELECTRO 1μF 50WV		
D1			HSS104	DIODE		
D1			ISS133	DIODE		
Q1,2			2SC1740S (Q, R)	TRANSISTOR		
Q1,2			2SC945(A) (Q, R)	TRANSISTOR		

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KX-W6020

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SPECIFICATIONS

Track System	4-track, 2-channel stereo, recording/playback	Harmonic Distortion	Less than 0.6% (at 1 kHz, 0 dB with normal tape)
Recording System	AC bias system (Bias frequency: 105 kHz)	Wow and Flutter	0.08% (W.R.M.S), ±0.22% (DIN)
Heads	Playback/record head × 1 Playback head × 1 Erasing head × 1	Input sensitivity/Impedance:	
Motor	DC motor × 2	LINE IN	77.5 mV/50 kΩ
Fast Winding Time	Approx. 90 seconds with C-60 tape	Output Level/Impedance:	
Frequency Response (± 6 dB) – 20 dB recording:		LINE OUT	270 mV/3.9 kΩ
Normal Tape	20 Hz to 15,000 Hz	PHONES	0.2 mW/8 Ω Headphones
CrO₂ Tape	20 Hz to 16,000 Hz		
Metal Tape	20 Hz to 16,000 Hz	[GENERAL]	
Signal-to Noise Ratio:		Power Consumption	20 W
Dolby C Type NR ON ..	72 dB (Normal tape)	Dimensions	W: 440 mm (17-5/16") H: 127 mm (5") D: 268 mm (10-9/16")
Dolby B Type NR ON ..	65 dB (Normal tape)		
Dolby NR OFF	57 dB (Normal tape)	Weight (Net)	4.7 kg (10.4 lb)

Note: **KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.**

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Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.
La marque DOLBY et le double "D" sont des marques déposées des Dolby Laboratories.
Le système de réduction du bruit de fond est fabriqué sous licence des Dolby Laboratories.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.
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Dolby-Rauschunterdrückung mit Lizenz der Dolby Laboratories gefertigt.

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Accessories

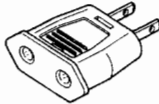
Audio cord × 2
(E30-0615-05)



System control cord × 1
(E30-1392-05)



AC plug adaptor × 1
(For the unit with a European AC plug in areas other than Europe.)
(E03-0115-05)



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